

ECOLOGICAL

WATER

CONSTRUCTION MANAGEMENT

77 Batson Drive Manchester, CT 06042 T: 860 643 9560 F: 860.646.7169 www.nebio.com



NEW ENGLAND BIOASSAY A DIVISION OF GZA CHRONIC AQUATIC TOXICITY TEST REPORT

Permitee:	Pine B	rook Country	Club		NPDES	# MA	0032212
Report submitted to:	42	Newton Stree	t				
	We	ston, MA 0249	3		_		
Sample ID:		Effluent			-		
Test Month/Year:		July 2019			-		
NEB Proj#	0.	5.0752101.00			_		
Test Type / Method:	Ceriodaphnia a	<i>lubia</i> Modified	Chronic	Static	-Renewa	ıl Freshw	vater
., .	Test Method 1						
	Pimephales pro	•			tic-Rene	wal Fresl	nwater
	Test Method 1						
Effluent Sample Dates:	#1 7/21 2	2/10 #2	7/22	2/1/1	.0 4	·	7/25 26/10
Emuent Sample Dates:	#17/21-22	2/19#2	1/23	3-24/1	19 1	3	7/25-26/19
Test Start	Date:	7/2	2/19				
		Results Summ	ary				
Your results were as fol	lows:						
Passed all permit limits							
1							
		Acute Test Res	ults				
Species	LC50	A-NOE	C	Perr	nit Limi	t T	Pass / Fail
Ceriodaphnia dubia	>100%	100%	,	≥	100%		Pass
Pimephales promelas	>100%	100%	,	≥	100%		Pass
	C	hronic Test Re	sults				
Species	C-NOEC	C-LOEC	IC	25	Permi	t Limit	Pass/Fail
Ceriodaphnia dubia	100%	>100%	>10	0%	≥ 2	.5%	Pass
Pimephales promelas	100%	>100%	>10	0%	≥ 2	.5%	Pass
Data Qualifiers affecting	this test:						
Certifications & Approvals: NH EL	AP (2071) NI DEP (CT	7405)					

This report shall not be reproduced, except in its entirety, without approval of NEB. NEB is the sole authority for authorizing edits or modifications to the data contained in this report. NEB holds no responsibility for results and/or data that are not consistent with the original. Please contact the Lab Manager, Kimberly Wills, at 860-858-3153 or kimberly wills@gza.com if you have questions concerning these results.

Test Report Certification

Permittee name:	Pine Brook Country Cl	ub	Permit number:	MA0032212		
Client sample ID:	Effluent		Test Start Date:	7/22/19		
Whole	e Effluent Toxicity Test	Report Cer	tification (Permi	ttee)		
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.						
Executed on:						
	(Date)	Authorize	d Signature	-		
		Print or Ty	pe Name and Title			
		Print or Ty	pe the Permittee's Na	ime		
			MA003221	2		
		Print or Ty	pe the NPDES Permit	Number		
Whole Efflu	uent Toxicity Test Repo	rt Certifica	tion (Bioassav La	boratory)		
	results reported relate only t					
	· · · · · · · · · · · · · · · · · · ·	p		-		
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.						
	1 1.0	. 10	AH C			

2 of 85 NEB Issued: 8/20/19

Laboratory Manager
New England Bioassay a division of GZA

General Test Conditions

Permittee name	Pine Broo	k Country Club	Permit nun	nber: MA003	32212
Client sample ID_	E	ffluent	Test Start I	Date: 7/22	/19
y					
1	Sar	mple Collection Infor	mation		
Effluent #1 Dates/Tir	mes: <u>7/21-22/19</u> @	1338-0908 Receivin	ng Water #1 Date/	Time: <u>7/22/19</u> (@ 0932
Effluent #2 Dates/Tir	mes: <u>7/23-24/19</u> @	2347-1006 Receiving	ng Water #2 Date/	Time: 7/24/19 (@ 0940
Effluent #3 Dates/Tir	mes: <u>7/25-26/19</u> @	1030-0900 Receivin	ng Water #3 Date/	Time: 7/26/19 (@ <u>0926</u>
Were a minimum of three samples collected? Yes $\ oxdot$ No $\ oxdot$ *(see note below)					
Were samples used	Were samples used within the first 36 hours of collection? Yes \square No \square * (see note below)				
* sample collection r	note:				
		Test Conditions			
Permittee's Receiving	g Water: Pine Brook				
Ceriodaphnia dubia					<u></u>
• Dilution water: Laboratory synthetic soft water (hardness 45 - 55 mg/L CaCO3)					
Control water: Receiving water collected at a point immediately upstream of or away from the discharge					
Pimephales promelas					
• Dilution water: La	Dilution water: Laboratory synthetic soft water (hardness 45 - 55 mg/L CaCO3)				
Control water: Rec	eiving water collected	at a point immediately	upstream of or a	way from the disch	arge
Effluent concentration	ons teste 0%, 6.25%, 1	2.5%, 25%, 50%, 100%			
Was effluent salinity	adjusted? No	Yes with Instan	t Ocean sea salts t	o ppt	
Dechlorination proce	-	asured using 4500 CL-G			
• Dechlorination wa		Ü			
Aeration: Did Dissolv	ed Oxygen levels fall	below 40% saturation?	Yes 🗆 No	√	
Test Aera	ated at <100 bubbles/	minute as of: N/A			
TRC results and further information about aeration of samples can be found attached in "sample receipt chemistry"					
Reference Toxicant Data					
Ceriodaph	nia dubia		Fathead r	ninnows	
Date:	7/1/19		Date:	7/1/19	
Toxicant:	Sodium chloride		\ -	Sodium chloride	_
-	NEB CTRMH		Dilution Water:		
Organism Source:		O	 _ :rganism Source		_
Reproduction IC25:			Growth IC25:		_
Results within range	Section Section 1		ults within range		

Ceriodaphnia dubia Test Results

Permittee name:	Pine Brook Country Club Perr		mit number:	MA0032212		
Client sample ID:	Effluent Test Dates:		7/22/19	- 7/28/19		
Test Acceptability Criteria						
Lab Diluent Survival:	100%	Mean Lab Diluent Reprodu	ction:	25.6yo	ung per female	
Brook Control Survival:	100_%	Mean Brook Control Reproduction:		16.1yo	ung per female	
Thiosulfate Control Survival:	N/A%	Mean Thiosulfate Control F	Reproduction:	N/Ayo	ung per female	
Presence of an asterisk (*) indicates EPA criteria was not met, see explanation in the "Results Discussion" section at the bottom of the following page.						
Test Results						

		Permit Limit	Test Result	Pass/Fail Status
Acute	48 hr LC50	≥ 100%	>100%	Pass
Data	48 hr NOEC		100%	
Julu	TUa			
	Chronic LC50		>100%	出 是更加 2
	Survival C-NOEC		100%	
	Survival C-LOEC		>100%	
	Reproduction C-NOEC		100%	
Chuania	Reproduction C-LOEC		>100%	
Chronic Data	Reproduction IC25		>100%	
Duta	Reproduction IC50		>100%	
	Reportable C-NOEC	≥ 25%	100%	Pass
	Reportable C-LOEC		>100%	
	MATC		>100%	
	TUc		Post with	

Presence of an asterisk (*) indicates qualified data, see explanation in the "Results Discussion" section at the bottom of the following page.

Test Variability					
Reproduction PMSD:33.6% Upper & Lower EPA bounds: 13 - 47% 🔲 Low 🗹 Within bounds 🔲 High	1				
PMSD exceeds upper bounds. Test results are highly variable and may not be sensitive enough to determine					
the presence of toxicity at the permit limit concentration (PLC)					
$ ilde{ullet}$ The PMSD falls within the upper (47%) and lower (13%) bounds. Results are reportable.					
\square PMSD falls below the lower bound test variability criterion. The test is very sensitive. The relative percent					
difference (RPD) between the control and each treatment was calculated and compared to the lower bound.					
The RPD values for all concentrations fall below the lower bound. Any differences observed in this test are considered statistically insignificant.					
Some of the concentrations that were flagged as statistically significant have RPD values that fall below the lower bound. Any differences observed in these concentrations will not be considered statistically significantly decreased from the control.					
\square No statistically significant reductions were observed in this test.					

Ceriodaphnia dubia Test Results

Permittee name:	Pine Brook Country C	lubPer	mit number:	MA0032212				
Client sample ID:	Effluent	Test Dates:	7/22/19	7/28/19				
	Concentration - Response Evaluation							
Survival: #12 No significant effects at any test concentration with a flat concentration-response curve. Test concentrations performed very similarly to dilution control.								
,	Reproduction: #12 No significant effects at any test concentration with a relatively flat concentration-response curve. Test concentrations performed both above and below (but similarly to) the dilution control.							
The concentration - respons	The concentration - response relationship was reviewed and the following determination was made:							
Survival Reproduc	tion							
XX	Results are reliable and repo	rtable						
	Results are anomalous	(see explanation below)						
	Results are inconclusive - ret	est (see explanation below)						
	Results Discussion (if applicable):							

Pimephales promelas Test Results

Permittee name:	Pine Brook Country Club			Permit number:		MA0032212
Client sample ID:	Effluent rest Dates:		7/22/19		7/29/19	
Test Acceptability Criteria						
Lab Diluent Survival: Brook Control Survival: Thiosulfate Control Survival: Presence of an asterisk (*) indat the bottom of the following	N/A % licates EPA o		Growth: trol Growth:	0.04 r	ng ng ng ts Dis	cussion" section
Test Results						

Permit Limit Test Result Pass/Fail Status

		T CHINE CHINE	. Test nesure	Pass/Fail Status
Acuto	48 hr LC50	≥ 100%	>100%	Pass
Acute Data	48 hr NOEC		100%	
Duta	TUa			
	Chronic LC50		>100%	
	Survival C-NOEC		100%	
	Survival C-LOEC		>100%	
	Growth C-NOEC		100%	
Chronic	Growth C-LOEC		>100%	
Chronic Data	Growth IC25		>100%	
Dutu	Growth IC50		>100%	
	Reportable C-NOEC	≥ 25%	100%	Pass
	Reportable C-LOEC		>100%	
	MATC		>100%	
	TUc			

Presence of an asterisk (*) indicates qualified data, see explanation in the "Results Discussion" section at the bottom of the following page.

Test Variability					
rowth PMSD:13.9% Upper & Lower EPA bounds: 12 - 30%					
The RPD values for all concentrations fall below the lower bound. Any differences observed in this test are considered statistically insignificant.					
Some of the concentrations that were flagged as statistically significant have RPD values that fall below the lower bound. Any differences observed in these concentrations will not be considered statistically significantly decreased from the control.					
No statistically significant reductions were observed in this test.					

Pimephales promelas Test Results

Permittee name:	Pine Brook Country Club		Permit number:	MA0032212		
Client sample ID:	Effluent	Fest Dates:	7/22/19 -	7/29/19		
	Concentration - Respons	e Evaluation				
Survival: #12 No significant effects at any test concentration with a flat concentration-response curve. Test concentrations performed very similarly to dilution control.						
Growth: #13 No significant effects at any test concentration with a relatively flat concentration-response curve. Test concentrations performed equal to or better than the dilution control.						
The concentration - response relationship was reviewed and the following determination was made:						
Survival Growth						
<u>X</u> X	Results are reliable and reporta					
	_ Results are anomalous (see ex	xplanation belo	ow)			
	Results are inconclusive - retest	(see explanation	on below)			
	Results Discussion (if a	 pplicable):				

TEST METHODS

Ceriodaphnia dubia

Test type: Modified Chronic Static Renewal Freshwater Test

Test Reference Manual: EPA-821-R-02-013 "Short-Term Methods for Estimating the Chronic Toxicity of

Effluents and Receiving Water to Freshwater Organisms"

Test Method: Ceriodaphnia dubia Survival and Reproduction Test - EPA 1002.0

Temperature: 25 °C \pm 1°C (Temperatures should not deviate by more than 3°C during the test)

(required)

Light Quality: Ambient Laboratory Illumination (recommended)

Light Intensity: 10-20 μE/m2/s, or 50-100 ft-c (recommended)

Photoperiod: 16 hours light, 8 hours dark (recommended)

Test chamber size: 30 mL (recommended minimum)

Test solution volume: 15 mL (recommended minimum)

Renewal of Test Solutions: Daily (required)

Age of Test Organisms: Less than 24 hours; and all released within a 8-h period (required)

Number of Neonates

Per Test Chamber: 1 Assigned using blocking by known parentage (required)

Number of Replicate Test

Chambers Per Treatment: 10 (required minimum)

Number of Neonates Per

Test Concentration: 10 (required minimum)

Feeding Regime: Fed 0.1 mL each of YCT and algal suspension per exposure chamber daily.

(recommended)

Cleaning: Use new plastic cups daily (recommended)

Aeration: None (recommended)

Test Duration: Until 60% or more of control females have three broods

(maximum test duration 8 days) (required)

Endpoints: Survival and reproduction (required)

Test Acceptability: 80% or greater survival of all control organisms and an average of 15 or more

young per surviving female in the control solutions. 60% of surviving control

females must produce three broods. (required)

Sampling Requirements: Minimum of three samples with a maximum holding time of 36 hours before

first use. (required)

Sample volume required: 1 L/Day (recommended)

Pimephales promelas

Test type: Modified Chronic Static Renewal Freshwater Test

Test Reference Manual: EPA-821-R-02-013 "Short-Term Methods for Estimating the Chronic Toxicity of

Effluents and Receiving Water to Freshwater Organisms"

Test Method: Pimephales promelas Survival and Growth Test - EPA 1000.0

Temperature: 25 °C \pm 1°C (Temperatures should not deviate by more than 3°C during the test)

(required)

Light Quality: Ambient Laboratory Illumination (recommended)

Light Intensity: 10-20 μE/m2/s, or 50-100 ft-c (recommended)

Photoperiod: 16 hours light, 8 hours dark (recommended)

Test chamber size: 600 mL (500 mL is recommended minimum)

Test solution volume: 250 mL (recommended minimum)

Renewal of Test Solutions: Daily (required)

Age of Test Organisms: Newly hatched larvae less than 24 hours old (required)

Number of Organisms

Per Test Chamber: 10 (recommended)

Number of Replicate Test

Chambers Per Treatment: 4 (required minimum)

Number of Organisms Per

Test Concentration: 40 (required minimum)

Feed ing Regime: Feed 0.15 g of a concentrated suspension of newly hatched brine shrimp

nauplii twice daily, 6 h between feedings (at the beginning of the work day prior to renewal, and at the end of the work day following renewal).

Sufficient Artemia are added to provide an excess.

Cleaning: Siphoned daily, immediately before test solution renewal (required)

Aeration: None, unless DO concentration falls below 4.0 mg/L, at which point the rate

should not exceed 100 bubbles/minute. (recommended)

Test Duration: 7 days (required)

Endpoints: Survival and growth (weight) (required)

Test Acceptability: 80% or greater survival in controls; average dry weight per surviving organism in

control chambers equals or exceeds 0.25 mg (required)

Sampling Requirements: Minimum of three samples with a maximum holding time of 36 hours before

first use. (required)

Sample volume required: 2.5 L/Day (recommended)

CERIODAPHNIA DUBIA DATASHEETS & STATISTICAL ANALYSIS

NEW ENGLAND BIOASSAY TOXICITY DATA FORM CHRONIC COVER SHEET

CLIENT:	Pine Brook Country Club	C.dubia TEST ID #	19-970a
ADDRESS:	42 Newton Street	CHAIN OF CUSTODY #	C39-2767/68
2 	Weston, MA 02193	NEB PROJECT #	05.0752101.00
PERMITTEE:	Pine Brook Country Club	SAMPLE ID:	Effluent
PERMIT NUMBER:	MA0032212		
DILUTION WATER:	Laboratory Soft Water		

INVERTEBRATES

TEST SET-UP TECHNICIAN:	PD
TEST SPECIES:	Ceriodaphnia dubia
NEB LOT #	Cd19 (RMH 157)
AGE:	< 24 hours
TEST SOLUTION VOLUME (mls):	15
ORGANISMS PER TEST CHAMBER:	1
ORGANISMS PER CONCENTRATION:	10

LABORATORY CONTROL WATER (SRCF)

Lot Number	Hardness mg/L CaCO ₃	Alkalinity mg/L CaCO ₃
C39-S017	50	35

	DATE	TIME
TEST START:	7/22/19	1422
TEST END:	7/28/19	1357

COMMENTS:			
-			
-			
REVIEWED BY:	Ulli	DATE:	8/20/19
	()		/ / '

NEW ENGLAND BIOASSAY - CHRONIC TOXICITY TEST BROOD DATA SHEET

FACILITY NAME & AD	DRESS: Pine	Brook Co	untry	Club,	42 Newton Stree	et, Weston MA 021	93	
NEB PROJECT NUMBE	R: 05.07	52101.00		NEB T	EST NUMBER:	19-970a	COC#	C39-2767/68
TEST ORGANISM:	Ceriodaphnia d	lubia		AGE:	<24 hours		Lot # 0	Cd19 (RMH 157
START DATE:	7/22/19	TIME:	142	22	END DATE:	7/28/19	TIME:	1357

Culture Lot# Cd19 (RMH 157)															
	Cup#	A1	A2	А3	A4	A5	A6	A7	A8	A9	A10	Total Live	# Live	Analyst-	Analyst-
Effluent	Day					Rep	licate					Young	Adults	Transfer	Counts
Concentration	Number	Α	В	С	D	E	F	G	Н	ı	J				
	0	√	✓	✓	√	✓	✓	✓	✓	✓	✓	0	10	PD	
	1	√	✓	✓	✓	✓	✓	✓	✓	✓	✓	0	10	СН	J. Pag
	2	√	✓	✓ .	✓	✓	✓	✓	✓	✓	✓	0	10	cw	
	3	✓	✓	4	✓	✓	✓	6	5	✓	✓	15	10	СН	СН
NEB Lab	4	5	4	✓	5	3	4	✓	✓	8	6	35	10	CW	CW
Diluent	5	12	12	11	4	10	8	8	10	13	4	92	10	cw	CW
	6	10	✓	18	12	12	10	16	10	20	6	114	10	CW	CW
	7														
	totals	27	16	33	21	25	22	30	25	41	16	256	10	br. Se	MC
		Α	В	С	D	E	F	G	Н	1	J				
	0		✓	✓	✓	✓	√	✓	✓	✓	✓	0	10		
	1	√	√	✓	✓	✓	√	✓	✓	✓	✓	0	10		
	2	√	✓	_ <	✓	_ <	✓	✓	✓	✓	✓	0	10	2000	
Pine Brook	3	✓	3	1	✓	4	4	✓	✓	✓	✓	12	10		1 10
Control	4	5	✓	✓	√	_ <	√		✓	5	✓	10	10		A PURE
	5	9	8	4	1	9	8	11	6	✓ .	12	68	10		
	6	8	✓	9	12	10	8	10	6	8	✓	71	10		
	7													Will be a	15/16/16
	totals	22	11	14	13	23	20	21	12	13	12	161	10		
		Α	В	С	D	E	F	G	Н	l l	J		(F + 3		
	0	√	✓	✓	√	√	√	✓	✓	✓	✓	0	10	453318	
	1	√	✓	✓	✓	√	√	√	✓	✓	✓	0	10	ASIA S	
	2	✓	✓	_ <	✓	_ <	√ _	✓_	✓	✓	✓	0	10	NEW YORK	
	3	7	1	_	✓	✓	✓	✓	5	✓	✓	13	10		
6.25%	4	√	7	5	6	8	6	4	✓	6	7	49	10		
	5	13	7	10	✓	11	11	8	15	12	14	101	10		
	6	17	3	√/x	1	10	13	- 8	15	12	6	85	9	30 T 10	
	7														ale + t
	totals	37	18	15	7	29	30	20	35	30	27	248	9		TO VE I

NEW ENGLAND BIOASSAY - CHRONIC TOXICITY TEST BROOD DATA SHEET

FACILITY NAME & ADDRESS: Pine Brook Country Club, 42 Newton Street, Weston MA 02193

NEB PROJECT NUMBER: 05.0752101.00 ORGANISM: Ceriodaphnia dubia START DATE: 7/22/19

Part Concentration Number A				-									Total			1 :00
Number	Effluent	Day									Live	# Live Adults				
1			Α	В	С	D	E	F	G	Н	l l	J	Young			
12.5%		0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0	10		
12.5% 3		1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0	10		
12.5%		2	\	✓	✓	✓	✓	✓	✓	✓	✓	✓	0	10		2. 16
12.5% 5		3	6	3	6	4	✓	5	4	5	✓	✓	33	10	ME I	
5	12.5%	4	✓	✓	✓	✓	8	✓	1	✓	6	7	22	10		
Totals	12.570	5	14	12	12	14		13	12	13	14	16	133	10		W. Hall
Totals A3 32 38 34 36 38 31 35 40 43 370 10 10 10 10 10 10 10		6	23	17	20	16	15	20	14	17	20	20	182	10	HPL C	
A B C D E F G H I J J		7														
A B C D E F G H I J J																
25% O		totals	43	32	38	34	36	38	31	35	40	43	370	10	88=4	1
1				-	$\overline{}$		_	_			_		W = 1,1			
2								_			-		_			1 3
25% 3				_		_		_								
25%		-		_				_	-		-					
5 15 12 13 14 12 14 \(\sqrt{13} \) 14 13 120 10 \\ 6 20 18 18 18 14 15 18 10 21 18 18 170 10 \\ 7 \\ \tag{1} \) 15 12 13 3 3 3 39 14 40 38 38 38 349 10 \\ \tag{1} \) 16 1 3 3 5 33 39 14 40 38 38 38 349 10 \\ \tag{2} \) 17 \(\sqrt{1} \) 18 1 18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				_	-	-		_	-		-	_	_			
6 20 18 18 14 15 18 10 21 18 18 170 10 7 Iotals 40 36 36 35 33 39 14 40 38 38 349 10 8 A B C D E F G H I J IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	25%				-											
Totals 40 36 36 35 33 39 14 40 38 38 349 10 A B C D E F G H I J 0 10				_		-		_	_		_		_	-		
totals 40 36 36 35 33 39 14 40 38 38 349 10 A B C D E F G H I J J			20	18	18	14	15	18	10	21	18	18	170	10		
A B C D E F G H I J D D D D D D D D D D D D D D D D D D		7														
A B C D E F G H I J D D D D D D D D D D D D D D D D D D		A - A - I -	40	26	26	25	22	20	4.4	40	20	20	240	40	CALL STREET, SAN	
50 J		totals		_		-		_			 		349	10		
1				_			_	_	_		_			40	HS Ass	
2					-	-		_			_					
50% 3				-		_			-		_					2 10
50% 4											_					
5 16 14 12 14 14 10 12 14 12 16 134 10 <td< td=""><td>50%</td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td></td><td></td><td></td><td></td></td<>	50%				-						_					
6 18 21 20 21 20 17 18 18 6 10 169 10 7	30%					1					_					- (670
7 Image: color of total or color or color of total or color or co			-	-	-	$\overline{}$		$\overline{}$			_		_	-		F-3
totals 39 40 38 38 39 32 35 37 22 32 352 10 A B C D E F G H I J D D D D D D D D D D D D D D D D D D		$\overline{}$	10		20	2.1	20	17	10	10	-	10	103	10		
100% A B C D E F G H I J D 10 10 10 11 1 1 1 1 1 1 1 1 1 1 1 1 1																
100% A B C D E F G H I J D 10 10 10 11 1 1 1 1 1 1 1 1 1 1 1 1 1		totals	39	40	38	38	39	32	35	37	22	32	352	10		
100%		totals	_								_		I SEC.	704.1		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	8	n			$\overline{}$			_	-		_		0	10		100
100% 2 \(\) \(\) \(\) \(8				-				-							
3 6 7 6 6 5 5 X 6 ✓ 5 46 9 4 ✓ ✓ ✓ ✓ ✓ X ✓ 6 ✓ 6 9 5 14 16 11 15 14 15 X 17 15 16 133 9 6 21 20 18 18 16 21 X 22 18 20 174 9			-		-			_								
100% 4 \(\sqr		-		-	-			_	-		_					V
5 14 16 11 15 14 15 X 17 15 16 133 9 6 21 20 18 18 16 21 X 22 18 20 174 9	100%				$\overline{}$									-		100
6 21 20 18 18 16 21 X 22 18 20 174 9	255/6				-	$\overline{}$					-		-			7/15
											_					1111
				20	10	10	10		$\vdash $		10	20	1/4	-		
totals 41 43 35 39 35 41 0 45 39 41 359 9		totals	41	43	35	39	35	41		45	39	41	359	9		

50

100

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

1/1

0/1

1/1

1/1

1/1

1/1

Report Date: Test Code/ID:

07 Aug-19 13:49 (p 1 of 6) 19-970a / 09-1719-3379

										Tes	t Code/ID	:		19-970a / (09-1719-33
Cerioda	phnia	7-d Survival and	l Reprodu	ıction T	est								N	lew Englai	nd Bioassa
Analysis	s ID:	21-0230-2634	En	dpoint:	2d S	Survival Rat	e			CE1	IS Version	n:	CETISV	1.9.4	
Analyze	d:	07 Aug-19 13:48	An	alysis:	Line	ar Interpola	tion (ICPIN	l)		Stat	us Level:	:	1		
Batch ID):	21-2667-7965	Tes	st Type:	Rep	roduction-S	urvival (7d))		Ana	lyst:				
Start Da		22 Jul-19 14:22		otocol:		V821/R-02-		'			•	.abo	ratory Wa	ter	
		28 Jul-19 13:57		ecies:		iodaphnia d	, ,			Brir			pplicable		
Test Ler			•	con:		nchiopoda							use Cultu	re	Age: <2
Sample	ID:	08-1092-6824	Co	de:	305	5C2E8				Pro	ject:				
		22 Jul-19 09:08		terial:		Applicable						Pine	Brook Co	intry Club	(MA00322
		22 Jul-19 12:00		S (PC):	1400	Applicable					ion:	IIIC	DIOOK COI	and y Club	(101700022
Sample				ent:	Pine	Brook Cou	intry Club			Otal					
						, DIOOK OOL	miny Oldo								
	-	olation Options													
X Transi	form	Y Transform	Sec			amples	Exp 95%		Metho						
Log(X)		Linear	502	2123	200		Yes		Two-Po	oint Interp	oolation				
Point Es	stimat	tes													
Level	%	95% LCL	95% UCL	. TU		95% LCL	95% UCL								
LC50	>100	n/a	n/a	<1		n/a	n/a							_	
2d Survi	ival R	ate Summary					Calcu	ılated V	'ariate	(A/B)				Isoto	nic Variate
Conc-%		Code	Count	Mear	1	Min	Max	Std D	ev (CV%	%Effec	:t	A/B	Mean	%Effec
)		D	10	1.000	0	1.0000	1.0000	0.000	0 (0.00%	0.0%		10/10	1	0.0%
3.25			10	1.000	0	1.0000	1.0000	0.000	0 (0.00%	0.0%		10/10	1	0.0%
12.5			10	1.000	0	1.0000	1.0000	0.000	0 (0.00%	0.0%		10/10	1	0.0%
25			10	1.000	0	1.0000	1.0000	0.000	0 (0.00%	0.0%		10/10	1	0.0%
50			10	1.000	0	1.0000	1.0000	0.000	0 (0.00%	0.0%		10/10	1	0.0%
100			10	0.900	0	0.0000	1.0000	0.316	2	35.14%	10.0%		9/10	0.9	10.0%
2d Survi	ival R	ate Detail													
Conc-%		Code	Rep 1	Rep 2	2	Rep 3	Rep 4	Rep 5	i	Rep 6	Rep 7		Rep 8	Rep 9	Rep 10
)		D	1.0000	1.000	0	1.0000	1.0000	1.000	0	1.0000	1.0000		1.0000	1.0000	1.0000
3.25			1.0000	1.000	0	1.0000	1.0000	1.000	0 -	1.0000	1,0000		1.0000	1.0000	1.0000
12.5			1.0000	1.000	0	1.0000	1.0000	1.000	0	1.0000	1.0000		1.0000	1.0000	1.0000
25			1.0000	1.000	0	1.0000	1.0000	1.000	0 -	1.0000	1.0000		1.0000	1.0000	1.0000
50			1.0000	1.000	0	1.0000	1.0000	1.000	0 .	1.0000	1.0000		1.0000	1.0000	1.0000
100			1.0000	1,000	0	1.0000	1.0000	1.000	0 '	1.0000	0.0000		1.0000	1.0000	1.0000
2d Survi	ival R	ate Binomials													
Conc-%		Code	Rep 1	Rep 2	2	Rep 3	Rep 4	Rep 5	i 1	Rep 6	Rep 7		Rep 8	Rep 9	Rep 10
)		D	1/1	1/1		1/1	1/1	1/1	•	1/1	1/1		1/1	1/1	1/1
5.25			1/1	1/1		1/1	1/1	1/1		1/1	1/1		1/1	1/1	1/1
12.5			1/1	1/1		1/1	1/1	1/1		1/1	1/1		1/1	1/1	1/1
25			1/1	1/1		1/1	1/1	1/1		1/1	1/1		1/1	1/1	1/1

000-222-335-4 CETIS™ v1.9.4.1 Analyst:_____ QA:____

1/1

1/1

Report Date: Test Code/ID: 07 Aug-19 13:49 (p 2 of 6) 19-970a / 09-1719-3379

Ceriodaphnia 7-d Survival and Reproduction Test **New England Bioassay**

Linear Interpolation (ICPIN)

Analyzed:

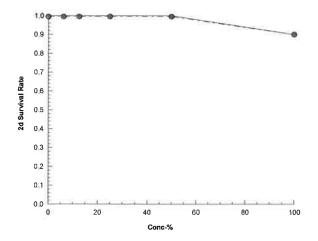
Analysis ID: 21-0230-2634 07 Aug-19 13:48 Endpoint: 2d Survival Rate

Analysis:

Status Level:

CETIS Version: CETISv1.9.4 1

Graphics



000-222-335-4 CETIS™ v1.9.4.1 QA: Analyst:_

16 of 85

Report Date: Test Code/ID: 07 Aug-19 13:49 (p 3 of 6) 19-970a / 09-1719-3379

								163	Codenib	•	13-31047	05-17-19-0079	
Cerioda	aphnia 7-d	Survival an	d Reprodu	ction T	est					N	lew Engla	nd Bioassay	
Analysi		9080-2849		lpoint:	6d Survival Ra				TIS Versio		1.9.4		
Analyze	ed: 07 /	Aug-19 13:48	3 Ana	lysis:	Linear Interpo	lation (ICPIN)	Stat	tus Level:	1			
Batch II	D: 21-	2667-7965	Tes	t Type:	Reproduction-Survival (7d)				Analyst:				
Start Da		Jul-19 14:22		tocol:	EPA/821/R-02					aboratory Wa	ter		
•		Jul-19 13:57	•	cies:	Ceriodaphnia			Brir		lot Applicable			
Test Le	ngth; 6d		Тах	on:	Branchiopoda			Sou	rce: Ir	n-House Cultu	ire	Age: <24	
Sample	ID: 08-	1092-6824	Cod	le:	3055C2E8			Pro	ject:				
-		Jul-19 09:08	Mat	erial:	Not Applicable	•		Sou	ırce: P	ine Brook Co	untry Club	(MA0032212	
		Jul-19 12:00		6 (PC):				Stat	tion:				
Sample	Age: 5h		Clie	ent:	Pine Brook Co	ountry Club							
Linear I	nterpolation	on Options											
X Trans	form	Y Transform			Resamples	Exp 95%							
Log(X)		Linear	196	2221	200	Yes	Two	-Point Interp	oolation				
Point E	stimates												
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL							
LC50	>100	n/a	n/a	<1	n/a	n/a							
6d Surv	vival Rate S	Summary				Calcu	ılated Varia	ite(A/B)			Isoto	onic Variate	
Conc-%	•	Code	Count	Mean	Min .	Max	Std Dev	CV%	%Effec	t A/B	Mean	%Effect	
0		D	10	1.000		1.0000	0.0000	0.00%	0.0%	10/10	1	0.0%	
6.25			10	0.900		1.0000	0.3162	35.14%	10.0%	9/10	0.975	2.5%	
12.5			10	1,000		1,0000	0.0000	0.00%	0.0%	10/10	0.975	2.5%	
25 50			10 10	1.000		1.0000 1.0000	0.0000 0.0000	0.00% 0.00%	0.0% 0.0%	10/10 10/10	0.975 0.975	2.5% 2.5%	
100			10	0.900		1.0000	0.3162	35.14%	10.0%	9/10	0.975	10.0%	
	ilius I Bata I	Dotoil		0.000	0.000	1,0000	0,0102	00,1170	10,070	0,10	0,0	10.070	
Conc-%	vival Rate [Bon 4	Ban '	Don 2	Don 4	Don 5	Don 6	Den 7	Don 0	Don 0	Don 40	
0		D	Rep 1 1.0000	1.000		Rep 4 1.0000	Rep 5 1.0000	Rep 6	Rep 7 1.0000	1.0000	Rep 9	1.0000	
6.25			1.0000	1.000		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
12.5			1.0000	1.000		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
25			1.0000	1.000		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
50			1.0000	1.000		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
100			1.0000	1.000	0 1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	
6d Surv	rival Rate E	Binomials											
Conc-%		Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10	
0		D	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
6.25			1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
12.5			1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
25			1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
50			1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
100			1/1	1/1	1/1	1/1	1/1	1/1	0/1	1/1	1/1	1/1	

000-222-335-4 CETIS™ v1.9.4.1 Analyst:_____ QA:_____

Report Date: Test Code/ID: 07 Aug-19 13:49 (p 4 of 6) 19-970a / 09-1719-3379

Ceriodaphnia 7-d Survival and Reproduction Test

New England Bioassay

Analyzed:

Analysis ID: 09-9080-2849 07 Aug-19 13:48

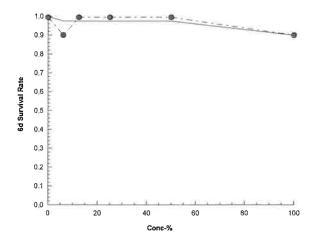
6d Survival Rate Endpoint: Analysis:

Linear Interpolation (ICPIN)

CETIS Version: Status Level: 1

CETISv1.9.4

Graphics



Report Date: Test Code/ID: 07 Aug-19 13:49 (p 5 of 6) 19-970a / 09-1719-3379

NEB Issued: 8/20/19

Ceriodaphnia	7-d Survival and Re	production Te	est			New Engl	and Bioassay
Analysis ID: Analyzed:	01-1364-2522 07 Aug-19 13:49	Endpoint: Analysis:	Reproduction Linear Interpolation (ICPIN)	CETIS Ver Status Lev	•	CETISv1.9.4 1	
Batch ID:	21-2667-7965	Test Type:	Reproduction-Survival (7d)	Analyst:			
Start Date:	22 Jul-19 14:22	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Labo	ratory Water	
Ending Date:	28 Jul-19 13:57	Species:	Ceriodaphnia dubia	Brine:	Not A	Applicable	
Test Length:	6d	Taxon:	Branchiopoda	Source:	In-Ho	ouse Culture	Age: <24
Sample ID:	08-1092-6824	Code:	3055C2E8	Project:			
Sample Date:	22 Jul-19 09:08	Material:	Not Applicable	Source:	Pine	Brook Country Clul	(MA0032212
Receipt Date:	: 22 Jul-19 12:00	CAS (PC):		Station:			

Linear Interpolation Options

Client:

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	970003	200	Yes	Two-Point Interpolation

Pine Brook Country Club

Test Acceptability Criteria		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	25.6	15	>>	Yes	Passes Criteria

Point Estimates

Sample Age: 5h

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>100	n/a	n/a	<1	n/a	n/a
IC50	>100	n/a	n/a	<1	n/a	n/a

Reproduction Summary			Calculated Variate						Isotonic Variate		
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	Mean	%Effect	
0	D	10	25.6	16	41	7.691	30.04%	0.0%	32.23	0.0%	
6.25		10	24.8	7	37	9.496	38.29%	3.13%	32.23	0.0%	
12.5		10	37	31	43	4.19	11.32%	-44.53%	32.23	0.0%	
25		10	34.9	14	40	7.68	22.01%	-36.33%	32.23	0.0%	
50		10	35.2	22	40	5.432	15.43%	-37.5%	32.23	0.0%	
100		10	35.9	0	45	13	36.21%	-40.23%	32.23	0.0%	

Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	D	27	16	33	21	25	22	30	25	41	16
6.25		37	18	15	7	29	30	20	35	30	27
12.5		43	32	38	34	36	38	31	35	40	43
25		40	36	36	35	33	39	14	40	38	38
50		39	40	38	38	39	32	35	37	22	32
100		41	43	35	39	35	41	0	45	39	41

000-222-335-4 CETIS™ v1.9.4.1 Analyst:_____ QA:____

Report Date: Test Code/ID: 07 Aug-19 13:49 (p 6 of 6) 19-970a / 09-1719-3379

NEB Issued: 8/20/19

Ceriodaphnia 7-d Survival and Reproduction Test

New England Bioassay

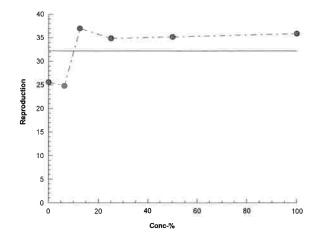
Analysis ID: 01-1364-2522 **Analyzed:** 07 Aug-19 13:49

Endpoint: Reproduction **Analysis:** Linear Interpolation (ICPIN)

CETIS Version: Status Level:

CETISv1.9.4 1

Graphics



000-222-335-4 CETIS™ v1.9.4.1 Analyst:_____ QA:____

100

1/1

1/1

1/1

Report Date: Test Code/ID:

07 Aug-19 13:49 (p 1 of 2) 19-970a / 09-1719-3379

								Tes	st Code/	ID:		19-970a /	09-1719-337
Ceriodaphnia	7-d Survival ar	nd Rep	roduction T	est								New Engla	nd Bioassay
Analysis ID:	05-2797-6577		Endpoint:	6d :	Survival Ra	ite		CE	TIS Vers	ion:	CETIS	/1.9.4	
Analyzed:	07 Aug-19 13:4	8	Analysis:			ingency Tab	les		tus Leve		1		
Batch ID:	21-2667-7965		Test Type:	Rec	oroduction-	Survival (7d)		An	alyst:				
Start Date:	22 Jul-19 14:22		Protocol:			-013 (2002)			uent:	Labo	ratory Wa	ater	
Ending Date:	28 Jul-19 13:57		Species:		iodaphnia d	, ,			ne:		Applicable		
Test Length:	6d		Taxon:	Bra	nchiopoda			So	urce:	In-Ho	ouse Cult	ure	Age: <24
Sample ID:	08-1092-6824		Code:	305	5C2E8			Pro	ject:				
Sample Date:	22 Jul-19 09:08		Material:	Not	Applicable	•		So	urce:	Pine	Brook Co	untry Club	(MA003221
Receipt Date:	: 22 Jul-19 12:00		CAS (PC):					Sta	tion:				
Sample Age:	5h		Client:	Pine	e Brook Co	untry Club							
Data Transfor	rm	Alt I	Нур					NOEL	LOEI	L	TOEL	TU	
Untransformed	d	C > -	Т					100	>100		n/a	1	
Fisher Exact/	Bonferroni-Holr	n Test											
Control	vs Group		Test	Stat	P-Type	P-Value	Decision	ι(α:5%)					
Dilution Water	6.25		0.500	0	Exact	1.0000	Non-Sign	ificant Effe	ct				
	12.5		1.000		Exact	1.0000	_	ificant Effe					
	25		1.000		Exact	1.0000	-	ificant Effe					
	50		1.000	_	Exact	1.0000	_	ificant Effe					
	100		0.500	0	Exact	1.0000	Non-Sign	ificant Effe	ct				
Data Summar	y												
Conc-%	Code	NR	R		NR + R	Prop NR	Prop R	%Effect					
0	D	10	0		10	1	0	0.0%					
6.25		9	1		10	0.9	0.1	10.0%					
12.5		10	0		10	1	0	0.0%					
25		10	0		10	1	0	0.0%					
50 100		10 9	0 1		10 10	1 0.9	0 0.1	0.0% 10.0%					
6d Survival R	ete Deteil		<u> </u>				9.11	10.070					
Conc-%	Code	Rep	1 Rep	,	Rep 3	Rep 4	Rep 5	Rep 6	Rep	7	Rep 8	Rep 9	Rep 10
0	D	1.000	<u>.</u>		1.0000	1.0000	1.0000	1.0000	1.000		1.0000	1.0000	1.0000
6.25	D	1.000			0.0000	1.0000	1.0000	1.0000	1.000		1.0000	1.0000	1.0000
12.5		1.000		-	1.0000	1.0000	1.0000	1.0000	1.000		1.0000	1.0000	1.0000
25		1.000			1.0000	1.0000	1.0000	1.0000	1.000		1.0000	1.0000	1.0000
50		1.000			1.0000	1.0000	1.0000	1.0000	1.000		1.0000	1.0000	1.0000
100		1.000			1.0000	1.0000	1.0000	1.0000	0.000		1.0000	1.0000	1.0000
	ate Binomials												
Conc-%	Code	Rep	1 Rep 2	,	Rep 3	Rep 4	Rep 5	Rep 6	Rep	7	Rep 8	Rep 9	Rep 10
0	D	1/1	1/1		1/1	1/1	1/1	1/1	1/1	•	1/1	1/1	1/1
6.25	_	1/1	1/1		0/1	1/1	1/1	1/1	1/1		1/1	1/1	1/1
12.5		1/1	1/1		1/1	1/1	1/1	1/1	1/1		1/1	1/1	1/1
25		1/1	1/1		1/1	1/1	1/1	1/1	1/1		1/1	1/1	1/1
50		1/1	1/1		1/1	1/1	1/1	1/1	1/1		1/1	1/1	1/1
400		4/4	1/ 1		474	1/ 1	4.74	4.14	0/1		4 (4	414	474

000-222-335-4 CETIS™ v1.9.4.1 Analyst:_____ QA:____

1/1

1/1

1/1

0/1

1/1

1/1

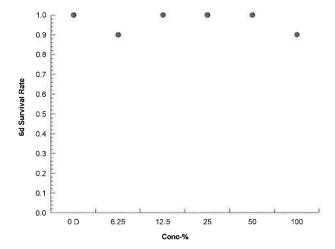
1/1

Report Date: Test Code/ID: 07 Aug-19 13:49 (p 2 of 2) 19-970a / 09-1719-3379

Ceriodaphnia 7-d Survival and Reproduction Test **New England Bioassay**

05-2797-6577 6d Survival Rate CETISv1.9.4 Analysis ID: Endpoint: **CETIS Version:** Analyzed: 07 Aug-19 13:48 Analysis: STP 2xK Contingency Tables Status Level: 1

Graphics



000-222-335-4 CETIS™ v1.9.4.1 Analyst:_

22 of 85

NEB Issued: 8/20/19

Report Date: Test Code/ID: 07 Aug-19 13:49 (p 1 of 2) 19-970a / 09-1719-3379

Ceriodaphnia	7-d Survival a	nd Reprodu	uction Test	:					N	ew Englai	nd Bioassay
Analysis ID: Analyzed:	15-4767-1651 07 Aug-19 13:4		•	eproduction onparametric-	-Control vs	Freatments		IS Versior us Level:	n: CETISv1	1.9.4	
Batch ID:	21-2667-7965	Te	st Type: R	eproduction-S	Survival (7d)		Anal	yst:			
Start Date:	22 Jul-19 14:22	Pro	otocol: E	PA/821/R-02-	013 (2002)		Dilu	ent: La	boratory Wat	er	
Ending Date:	28 Jul-19 13:57	' Sp	ecies: C	eriodaphnia d	ubia		Brine: Not Applicable				
Test Length:	6d	Ta	xon: B	Branchiopoda			Soul	Source: In-House Culture			Age: <24
	08-1092-6824			055C2E8			Proje				
•	22 Jul-19 09:08			ot Applicable			Sou		ne Brook Coເ	intry Club	(MA0032212
•	22 Jul-19 12:00		S (PC):				Stati	ion:			
Sample Age:	5h 	Cli	ent: P	ine Brook Cou	Intry Club						
Data Transfor		Alt Hyp					NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T					100	>100	n/a	1	33.63%
Steel Many-Or	ne Rank Sum T	est									
	/s Conc-%		Test Sta			P-Type	P-Value	Decisio			
Dilution Water	6.25		105.5	75		Asymp	0.8444	•	nificant Effec		
	12.5		145	75	0 18	Asymp	1.0000	•	nificant Effec		
	25		135.5	75	1 18		0.9999		nificant Effec		
	50		137.5	75	1 18	, ,	1.0000	_	nificant Effec		
	100		139.5	75	1 18	Asymp	1,0000	Non-Sig	nificant Effec	t	
Test Acceptab	ility Criteria	TAC	Limits								
Attribute	Test Stat	Lower	Upper	Overlap	Decision						
Control Resp	25.6	15	>>	Yes	Passes C	riteria					
ANOVA Table											
Source	Sum Squ	ares	Mean S		DF	F Stat	P-Value	Decisio			
Between	1513.33		302.667		5	4.279	0.0024	Significa	int Effect		
Error	3819.4		70.7296		54						
Total	5332.73				59						
Distributional	Tests										
Attribute	Test				Test Stat	Critical	P-Value	Decisio	n(α:1%)		
Attribute Variances	Test	quality of V	ariance Tes	st	Test Stat 13.06	Critical 15.09	P-Value 0.0228	Decisio Equal V	<u> </u>		
	Test Bartlett E	quality of V Vilk W Norr		t				Equal V	<u> </u>	ion	
Variances	Test Bartlett E Shapiro-\			et	13.06	15.09	0.0228	Equal V	ariances	ion	
Variances Distribution Reproduction	Test Bartlett E Shapiro-\			95% LCL	13.06	15.09	0.0228	Equal V	ariances	ion	%Effect
Variances Distribution Reproduction	Test Bartlett E Shapiro-\ Summary	Vilk W Non	nality Test		13.06 0.8528	15.09 0.9459	0.0228 3.7E-06	Equal Va	ariances mal Distribut		%Effect 0.00%
Variances Distribution Reproduction Conc-% 0	Test Bartlett E Shapiro-\ Summary Code	Vilk W Norr	mality Test Mean	95% LCL	13.06 0.8528 95% UCL	15.09 0.9459 Median	0.0228 3.7E-06 Min	Equal Van-Nor	ariances mal Distribut Std Err	CV%	
Variances Distribution Reproduction Conc-% 0 6.25 12.5	Test Bartlett E Shapiro-\ Summary Code	Count 10 10 10	Mean 25.6 24.8 37	95% LCL 20.1	13.06 0.8528 95% UCL 31.1	15.09 0.9459 Median 25 28 37	0.0228 3.7E-06 Min 16	Equal Von-Nor-Max	ariances rmal Distribut Std Err 2.432	CV% 30.04%	0.00%
Variances Distribution Reproduction Conc-% 0 6.25 12.5 25	Test Bartlett E Shapiro-\ Summary Code	Count 10 10 10 10	Mean 25.6 24.8 37 34.9	95% LCL 20.1 18.01 34 29.41	13.06 0.8528 95% UCL 31.1 31.59 40 40.39	15.09 0.9459 Median 25 28 37 37	0.0228 3.7E-06 Min 16 7 31	Max 41 37 43 40	Std Err 2.432 3.003 1.325 2.429	CV% 30.04% 38.29% 11.32% 22.01%	0.00% 3.13% -44.53% -36.33%
Variances Distribution Reproduction Conc-% 0 6.25 12.5 25 50	Test Bartlett E Shapiro-\ Summary Code	Count 10 10 10 10 10	Mean 25.6 24.8 37 34.9 35.2	95% LCL 20.1 18.01 34 29.41 31.31	13.06 0.8528 95% UCL 31.1 31.59 40	15.09 0.9459 Median 25 28 37	0.0228 3.7E-06 Min 16 7 31	Equal Von Non-Non Max 41 37 43	Std Err 2.432 3.003 1.325	CV% 30.04% 38.29% 11.32%	0.00% 3.13% -44.53%
Variances Distribution Reproduction Conc-% 0 6.25 12.5 25	Test Bartlett E Shapiro-\ Summary Code	Count 10 10 10 10	Mean 25.6 24.8 37 34.9	95% LCL 20.1 18.01 34 29.41	13.06 0.8528 95% UCL 31.1 31.59 40 40.39	15.09 0.9459 Median 25 28 37 37	0.0228 3.7E-06 Min 16 7 31	Max 41 37 43 40	Std Err 2.432 3.003 1.325 2.429	CV% 30.04% 38.29% 11.32% 22.01%	0.00% 3.13% -44.53% -36.33%
Variances Distribution Reproduction Conc-% 0 6.25 12.5 25 50 100	Test Bartlett E Shapiro-N Summary Code D	Count 10 10 10 10 10	Mean 25.6 24.8 37 34.9 35.2	95% LCL 20.1 18.01 34 29.41 31.31	13.06 0.8528 95% UCL 31.1 31.59 40 40.39 39.09	15.09 0.9459 Median 25 28 37 37 37.5	0.0228 3.7E-06 Min 16 7 31 14 22	Max 41 37 43 40 40	Std Err 2.432 3.003 1.325 2.429 1.718	CV% 30.04% 38.29% 11.32% 22.01% 15.43%	0.00% 3.13% -44.53% -36.33% -37.50%
Variances Distribution Reproduction Conc-% 0 6.25 12.5 25 50 100 Reproduction Conc-%	Test Bartlett E Shapiro-V Summary Code D	Count 10 10 10 10 10 10 10 Rep 1	Mean 25.6 24.8 37 34.9 35.2 35.9	95% LCL 20.1 18.01 34 29.41 31.31 26.6	13.06 0.8528 95% UCL 31.1 31.59 40 40.39 39.09 45.2 Rep 4	15.09 0.9459 Median 25 28 37 37 37.5	0.0228 3.7E-06 Min 16 7 31 14 22	Max 41 37 43 40 40	Std Err 2.432 3.003 1.325 2.429 1.718	CV% 30.04% 38.29% 11.32% 22.01% 15.43%	0.00% 3.13% -44.53% -36.33% -37.50%
Variances Distribution Reproduction Conc-% 0 6.25 12.5 25 50 100 Reproduction Conc-%	Test Bartlett E Shapiro-V Summary Code D	Count 10 10 10 10 10 10 20 10 10 10 10 10 10	Mean 25.6 24.8 37 34.9 35.2 35.9	95% LCL 20.1 18.01 34 29.41 31.31 26.6	13.06 0.8528 95% UCL 31.1 31.59 40 40.39 39.09 45.2	15.09 0.9459 Median 25 28 37 37 40	0.0228 3.7E-06 Min 16 7 31 14 22 0	Max 41 37 43 40 40	Std Err 2.432 3.003 1.325 2.429 1.718 4.111 Rep 8	CV% 30.04% 38.29% 11.32% 22.01% 15.43% 36.21%	0.00% 3.13% -44.53% -36.33% -37.50% -40.23%
Variances Distribution Reproduction Conc-% 0 6.25 12.5 25 50 100 Reproduction Conc-% 0	Test Bartlett E Shapiro-V Summary Code D	Count 10 10 10 10 10 10 27 37	Mean 25.6 24.8 37 34.9 35.2 35.9 Rep 2 16 18	95% LCL 20.1 18.01 34 29.41 31.31 26.6	13.06 0.8528 95% UCL 31.1 31.59 40 40.39 39.09 45.2 Rep 4	15.09 0.9459 Median 25 28 37 37 37.5 40	0.0228 3.7E-06 Min 16 7 31 14 22 0	Max 41 37 43 40 40 45 Rep 7 30 20	Std Err 2.432 3.003 1.325 2.429 1.718 4.111 Rep 8 25 35	CV% 30.04% 38.29% 11.32% 22.01% 15.43% 36.21%	0.00% 3.13% -44.53% -36.33% -37.50% -40.23%
Variances Distribution Reproduction Conc-% 0 6.25 12.5 25 50	Test Bartlett E Shapiro-V Summary Code D	Count 10 10 10 10 10 10 20 10 10 10 10 10 10	Mean 25.6 24.8 37 34.9 35.2 35.9 Rep 2	95% LCL 20.1 18.01 34 29.41 31.31 26.6 Rep 3	13.06 0.8528 95% UCL 31.1 31.59 40 40.39 39.09 45.2 Rep 4	15.09 0.9459 Median 25 28 37 37 37.5 40 Rep 5	0.0228 3.7E-06 Min 16 7 31 14 22 0 Rep 6	Equal Vi Non-Non Max 41 37 43 40 40 45 Rep 7	Std Err 2.432 3.003 1.325 2.429 1.718 4.111 Rep 8	CV% 30.04% 38.29% 11.32% 22.01% 15.43% 36.21% Rep 9	0.00% 3.13% -44.53% -36.33% -37.50% -40.23% Rep 10
Variances Distribution Reproduction Conc-% 0 6.25 12.5 25 50 100 Reproduction Conc-% 0 6.25	Test Bartlett E Shapiro-V Summary Code D	Count 10 10 10 10 10 10 27 37	Mean 25.6 24.8 37 34.9 35.2 35.9 Rep 2 16 18	95% LCL 20.1 18.01 34 29.41 31.31 26.6 Rep 3 33	13.06 0.8528 95% UCL 31.1 31.59 40 40.39 39.09 45.2 Rep 4 21 7	15.09 0.9459 Median 25 28 37 37.5 40 Rep 5 25 29	0.0228 3.7E-06 Min 16 7 31 14 22 0 Rep 6 22 30	Max 41 37 43 40 40 45 Rep 7 30 20	Std Err 2.432 3.003 1.325 2.429 1.718 4.111 Rep 8 25 35	CV% 30.04% 38.29% 11.32% 22.01% 15.43% 36.21% Rep 9 41 30	0.00% 3.13% -44.53% -36.33% -37.50% -40.23% Rep 10 16 27
Variances Distribution Reproduction Conc-% 0 6.25 12.5 25 50 100 Reproduction Conc-% 0 6.25 12.5	Test Bartlett E Shapiro-V Summary Code D	Count 10 10 10 10 10 10 27 37 43	Mean 25.6 24.8 37 34.9 35.2 35.9 Rep 2 16 18 32	95% LCL 20.1 18.01 34 29.41 31.31 26.6 Rep 3 33 15 38	13.06 0.8528 95% UCL 31.1 31.59 40 40.39 39.09 45.2 Rep 4 21 7 34	15.09 0.9459 Median 25 28 37 37 37.5 40 Rep 5 25 29 36	0.0228 3.7E-06 Min 16 7 31 14 22 0 Rep 6 22 30 38	Max 41 37 43 40 40 45 Rep 7 30 20 31	Std Err 2.432 3.003 1.325 2.429 1.718 4.111 Rep 8 25 35 35	CV% 30.04% 38.29% 11.32% 22.01% 15.43% 36.21% Rep 9 41 30 40	0.00% 3.13% -44.53% -36.33% -37.50% -40.23% Rep 10 16 27 43

000-222-335-4 CETIS™ v1.9.4.1 Analyst:____ QA:____

Report Date: Test Code/ID: 07 Aug-19 13:49 (p 2 of 2) 19-970a / 09-1719-3379

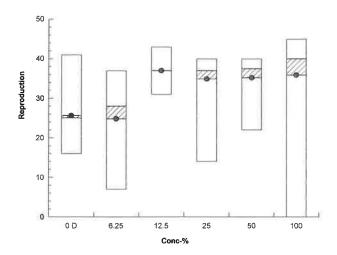
Ceriodaphnia 7-d Survival and Reproduction Test

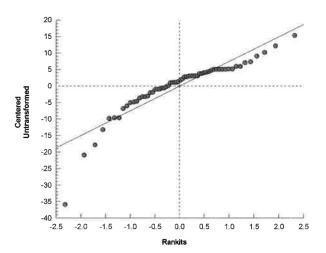
New England Bioassay

Analysis ID: 15-4767-1651 Reproduction **CETIS Version:** CETISv1.9.4 **Endpoint:** Analyzed: 07 Aug-19 13:49 Analysis: Nonparametric-Control vs Treatments

Status Level: 1

Graphics





Analyst:_ QA:_

24 of 85

NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDR					n Street, W		2193		
NEB PROJECT NUMBER:			5.0752101.0		TEST ORGA		Ceriodaphnia dubia		
DILUTION WATER SOUR			ratory Soft \		START DAT		7/22/19	TIME: 1422	
ANALYST	CW	BA	ко	AS	CW	BA	-		
NEB Lab Diluent	1	2	3	4	5	6	7	Remarks	
Temp °C Initial	24.7	25.6	26.0	25.6	25.9	25.8			
D.O. mg/L Initial	8.2	8.1	8.1	8.1	8.2	8.2			
pH s.u. Initial	7.7	7.8	7.4	7.7	7.5	7.8			
Conductivity µS Initial	196	196	196	195	195	194			
Temp °C Final	25.8	25.6	24.0	25.2	25.4	25.6			
D.O. mg/L Final	8.0	8.2	7.5	8.3	8.2	8.1			
pH s.u. Final	7.8	7.8	7.6	7.5	7.8	7.8			
Conductivity µS Final	202	205	208	203	208	203			
Pine Brook Control	1	2	3	4	5	6	7	Remarks	
Temp °C Initial	25.5	25.8	26.0	25.7	24.5	26.6			
D.O. mg/L Initial	8.8	8.3	8.8	8.9	8.6	9.3			
pH s.u. Initial	7.3	7.4	7.4	7.4	7.0	7.0			
Conductivity µS Initial	608	608	393	391	580	580			
Temp °C Final	26.0	25.7	24.1	25.3	25.3	25.7			
D.O. mg/L Final	8.0	8.2	7.4	8.2	8.2	8.0			
pH s.u. Final	7.7	7.7	7.4	7.5	7.8	7.4			
Conductivity µS Final	603	603	407	403	260	583			
6.25%	1	2	3	4	5	6	7	Remarks	
Temp °C Initial	24.9	25.7	26.0	25.5	25.7	25.9			
D.O. mg/L Initial	8.5	8.1	8.1	8.3	8.3	8.2			
pH s.u. Initial	7.5	7.6	7.4	7.5	7.5	7.5			
Conductivity µS Initial	252	252	254	250	250	245			
Temp °C Final	25.9	25.8	24.1	25.3	25.3	25.8			
D.O. mg/L Final	8.0	8.2	7.4	8.2	8.2	7.9			
pH s.u. Final	7.8	7.9	7.5	7.5	7.9	7.5			
Conductivity µS Final	271	266	268	277	312	258			
12.5%	1	2	3	4	5	6	7	Remarks	
Temp °C Initial	24.8	25.7	26.0	25.5	25.9	25.9			
D.O. mg/L Initial	8.3	8.1	8.0	8.1	8.3	8.3			
pH s.u. Initial	7.5	7.7	7.4	7.8	7.6	7.6			
Conductivity µS Initial	301	298	307	306	304	310			
Temp °C Final	25.8	25.8	24.1	25.3	25.3	25.7			
D.O. mg/L Final	7.9	8.2	7.4	8.1	8.2	7.9			
pH s.u. Final	7.8	7.9	7.5	7.6	8.0	7.5			
Conductivity µS Final	308	302	316	314	429	318			

NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDR					n Street, We		2193	
NEB PROJECT NUMBER:			5.0752101.0		TEST ORGA	NISM	Cerio	odaphnia dubia
DILUTION WATER SOUR	CE:	Labo	ratory Soft \	Water	START DAT	E:	7/22/19	TIME: 1422
25%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.8	25.6	26.0	25.4	25.7	25.8		
D.O. mg/L Initial	8.2	8.2	8.0	8.2	8.3	8.3		
pH s.u. Initial	7.5	7.7	7.4	7.9	7.6	7.6		
Conductivity µS Initial	412	410	422	427	423	418		
Temp °C Final	25.9	25.8	24.1	25.3	25.3	25.7		
D.O. mg/L Final	7.9	8.2	7.5	8.2	8.2	8.0		
pH s.u. Final	7.8	7.9	7.6	7.7	8.2	7.6		
Conductivity µS Final	412	413	432	430	424	423		
50%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.9	25.6	26.0	25.1	25.4	25.7		
D.O. mg/L Initial	8.3	8.3	7.8	8.3	8.4	8.4		
pH s.u. Initial	7.5	7.7	7.4	7.9	7.7	7.7		
Conductivity µS Initial	619	615	654	648	632	639		
Temp °C Final	25.9	25.9	24.1	25.4	25.3	25.7		
D.O. mg/L Final	8.0	8.2	7.4	8.2	8.2	8.0		
pH s.u. Final	7.9	8.0	7.7	7.9	8.2	7.7		
Conductivity µS Final	617	616	661	649	642	645		
100%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.9	25.4	26.0	24.8	25.3	25.5		
D.O. mg/L Initial	9.1	8.8	6.8	8.5	8.5	9.0		
pH s.u. Initial	7.5	7.7	7.5	7.8	7.8	7.6		
Conductivity µS Initial	831	1,033	1,086	1,081	1,059	1,059		
Temp °C Final	26.0	25.8	24.0	25.4	25.3	25.7		
D.O. mg/L Final	8.0	8.2	7.5	8.2	8.2	8.0		
pH s.u. Final	8.2	8.3	8.0	8.4	8.4	8.1		
Conductivity µS Final	975	1,026	1,088	1,074	1,052	1,054		
,,,								

Tak	ole o	f Ra	ndo	m P	ermuta	tion	s of	16				C.d	ubia	Tes	t ID#		19-9	70a	
7	12	15	15	1	2	7	16	10	2	14	15	7	13	13	10	6	1	8	10
13	3	8	16	7	10	11	10	13	5	11	7	13	16	7	7	5	13	2	14
3 11	1 8	4 16	5 14	14 15	13 6	3 2	14 6	9 2	13 16	13 8	2 5	9 12	15 3	6 9	2 13	8 4	4 3	5 10	8 4
14	9	1	6	3	9	14	13	8	6	5	8	14	7	3	15	13	11	4	7
2	16	10	13	5	5	13	2	11	7	3	12	5	14	12	16	2	2	9	15
4	6	13	7	2	15	1	9	1	4	7	10	6	9	11	9	7	6	16	11
6	14	6	10	4	14	4	15	3	3	4	16	2	6	5	1	12	10	6	9
10	15	2	1	13	12	16	3	4	8	10	1	15	5	14	12	14	12	3	2
12 15	10 7	7 5	12 2	9 10	11 7	9 8	8 12	12 6	14 15	15 6	4 13	11 16	8 12	16 15	8 4	9 11	14 8	14 12	1 6
16	2	11	8	8	8	15	5	16	1	1	9	8	1	8	14	16	5	13	5
9	13	14	3	6	4	10	11	5	12	9	3	10	4	4	3	10	9	1	3
8	11	9	4	11	3	12	7	7	10	12	14	3	10	1	6	15	16	15	12
1	5	12	11	16	16	5	4	14	9	16	11	1	2	10	5	1	15	7	13
5	4	3	9	12	1	6	1	15	11	2	6	4	11	2	11	3	7	11	16
11	8	16	5	5	13	1	13	2	16	1.4	12	9	8	7	5	13	3	13	conc 3
2	2	8	8	3 14	16	1 4	3	8	11	14 10	14	9 15	1	2	11	4	5	15	9
6	13	2	13	6	5	9	15	11	10	12	6	16	15	16	9	10	12	16	15
14	12	4	16	16	11	14	10	5	12	3	3	12	14	15	13	6	4	1	16
8	6	3	9	4	10	6	4	16	2	2	9	8	16	4	6	5	15	7	8
9	15	12	10	3	2	12	6	1	15	4	13	7	7	9	12	14	8	8	11
3	10	11	12	13	12	5	11	7	8	9	5	14	11	10	1	3	13	3	5
16	1	13	14	8	14	15	5	3	7	11	15	6	12	5	7	11	1	14	4
1 4	14	14	2 4	9 12	15 3	16 11	14	6 15	14	7 8	8 1	3 13	13 6	11 3	8	7 15	7 9	12 9	7
15	4 5	6 1	11	10	5 6	3	8 7	10	9 5	5	11	10	10	3 12	3 15	16	9 14	5	12
5	3	5	6	7	7	13	2	14	3	16	4	5	5	13	4	9	16	2	6
12	7	15	15	15	9	8	12	12	13	15	10	1	4	6	16	2	6	11	1
10	11	10	3	2	4	2	1	4	6	6	7	11	9	14	10	8	11	4	13
7	9	7	7	11	1	7	16	13	1	13	2	4	2	1	2	12	2	10	14
13	16	9	1	1	8	10	9	9	4	1	16	2	3	8	14	1	10	6	10
1	_	7		0	_	_	2	0	15	4	_	_	,	4	-	reps	12	,	10
1 9	6 15	7 11	4 3	8 11	6 15	5 9	2 10	8 1	15 3	4 8	6 2	6 15	1 7	4 9	5 8	7 16	13 1	2 14	10 3
10	16	4	5	12	9	16	11	7	1	7	16	11	8	3	3	12	2	3	4
4	14	1	9	5	5	4	13	6	8	15	5	12	5	7	16	5	11	8	1
7	3	13	14	15	2	1	14	16	5	14	9	2	16	1	12	6	14	4	13
16	11	2	1	14	16	6	9	3	4	16	14	3	15	11	11	3	9	12	5
3	10	16	16	13	7	13	1	11	14	9	10	16	2	10	2	10	7	10	16
11 15	13 2	9 3	13 12	4	13 12	8 2	3 4	5 13	13	10 3	12 13	5	12 4	5	14 1	13	16	5	6
14	1	3 14	6	9 10	1	3	12	4	10 2	2	4	14 13	3	2 16	9	9	8	6 7	12 14
13	12	5	11	3	11	15	8	2	7	11	7	8	14	6	4	4	4	15	11
12	5	10	7	2	14	7	15	14	16	13	1	9	10	12	10	11	10	9	8
8	9	8	10	6	4	11	7	10	11	6	8	4	9	8	15	8	6	11	9
2	7	6	2	1	8	10	6	15	12	1	11	7	11	13	6	1	15	13	15
6	4	15	8	16	10	14	16	9	6	12	3	10	6	14	7	2	12	16	7
5	8	12	15	7	3	12	5	12	9	5	15	1	13	15	13	15	5	1	2
13	4	10	4	16	13	16	13	5	3	6	14	1	16	8	7	2	3	3	12
5	14	4	6	8	2	15	1	13	14	16	4	15	4	3	12	12	1	4	7
2	2	2	15	14	16	9	12	16	6	10	15	14	9	10	1	14	8	8	16
7	12	15	8	12	3	5	14	7	12	5	13	16	1	7	5	11	2	9	3
6	9	7	14	9	14	10	11	15	11	12	1	12	12	14	16	3	11	11	8
14	5	16	7	10	8	11	8	14	13	7	11	6	3	11	4	4	6	6	9
15 11	11 6	8 6	9 1	7 4	12 1	8 3	7 16	1 12	15 5	9 4	3 9	3 13	7 13	13 6	11 8	10 15	4 9	5 1	1 14
4	10	3	16	2	11	3 7	9	6	9	1	8	4	11	5	2	16	10	12	4
1	8	1	13	1	15	4	4	11	4	2	16	5	8	1	9	5	12	16	6
9	7	14	2	6	4	14	10	9	8	15	10	7	10	9	10	6	14	10	11
12	1	9	10	15	5	2	15	10	2	14	2	8	2	4	13	8	5	15	5
3	3	12	11	5	9	6	6	3	10	13	12	9	6	2	15	7	15	7	13
10	15	11	5	13	7	12	5	2	7	11	5	10	15	12	3	1	13	13	10
8 16	13 16	13 5	3 12	3 11	10 6	13 1	2 3	4 8	1 16	8 3	6 7	11 2	14 5	15 16	6 14	9 13	16 7	2 14	2 15
10	10	J	12	11	U	1	J	o	10	3	,	4	J	10	14	13	,	14	13

Culture Chart

Lot # (219(RMH 157)

Brood	mother	source	: RM	1147	<u>e</u>	. Sou	rce's bro	od size:	22	(Qty.)		Ŧ	rneb	rook	7.27	2-19
Tech	AH	KF	KF	Au		KF	AU									
Date	7-16	7.17	7.18	7-19		7.21	222									
Day acc.	0	1	2	3	4	5	6	7		8	9	10	11	12	13	14
Cup #	N	N	7	6		15	1720		1							
2	N	N	2	5		13	Y 720		2							
3	N	N	2	5		15	73 719		3							
4	N	N	7	6		15	74 421		4							
5	N	N	7	5		13	Y 18		5							
6	N	N	2	7		13	T6 419		6							
7	N	N	2	7		14	77 421		7							
8	N	N	7	5		15	T8 422		8							
9	N	N	7	6		11	79		9							
10	N	N	7	6		16	Tito Y 22		10							
11	N	N	7	5		15	¥		11							
12	N	N	7	5		10	У		12							
13	N	N	7	4		13	У		13							
							onates pro et: ≥ 20 n			y 3rd brood od.		od mothe		N = no n ae = abo		

✓ or **P** = neonates present after renewal on previous day (see time in log).

= acceptable for acute testing only

T# = neonates used in test, replicate number of test noted (and brood counted).

acc. = if acclimated, H_2O type used w/ renewal this day.

Test organism collection:	- т	ray diagr used?	am	
Project#	Symbols (✓ / P)	(Y/N)	Time period, neonates released	Collection date / time
0752101	Т	У	7.21-19/1600 7 7-21-19/1920	7.22-19/1215
	Т		W	
	Т			
	Т			
	Т			
	Т			

PIMEPHALES PROMELAS DATASHEETS & STATISTICAL ANALYSIS

NEW ENGLAND BIOASSAY TOXICITY DATA FORM CHRONIC COVER SHEET

CLIENT:	Pine Brook Country Club	P.promelas TEST ID #	19-970b
ADDRESS:	42 Newton Street	CHAIN OF CUSTODY #	C39-2767/68
	Weston, MA 02193	NEB PROJECT #	05.0752101.00
PERMITTEE:	Pine Brook Country Club	SAMPLE ID:	Effluent
PERMIT NUMBER:	MA0032212		
DILLITION WATER.	Laboratory Soft Water	=	

VERTEBRATES

TEST SET-UP TECHNICIAN: _	BA
TEST SPECIES:	Pimephales promelas
NEB LOT #_	Pp19(7-22)
AGE:	< 24 hours
TEST SOLUTION VOLUME (mls):	400
ORGANISMS PER TEST CHAMBER:	10
ORGANISMS PER CONCENTRATION:	40

LABORATORY CONTROL WATER (SRCF)

Lot Number	Hardness mg/L	Alkalinity mg/L		
C39-S017	50	35		

	DATE	TIME
TEST START:	7/22/19	1429
TEST END:	7/29/19	1255

COMMENTS:		
*****	11 - OH	. 1
REVIEWED BY: _	Uflin (A)	DATE: 8 20 19
		, ,

NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS: Pine Broo				Country	Club, 42 Newt	on Street, Wes	ston MA 0	2193
NEB PROJECT NUI	05.0752101.00 TEST NUMBER; 19		19-970b	COC#	C39-2767/68			
TEST ORGANISM: Pimepha		les prome	las	AGE: <24 hc		s Lot#	Pp1	9(7-22)
START DATE: 7/22/19		TIME:	1429	END	DATE:	7/29/19	TIME:	1255

					Nur	mber of S	urvivors				
Effluent Concentration	Replicate Number	Day									
		0	1	2	3	4	5	6	7	Remarks	
	ANALYST	BA	KW	BA	AS	BA	BA	BA	LS		
MEDIAL	Α	10	10	10	10	9	8	8	7		
NEB Lab Synthetic	В	10	10	10	10	10	10	9	9		
Diluent	С	10	10	10	10	10	10	10	9		
	D	10	10	10	10	10	10	10	10		
	Α	10	10	10	5	1	0	0	0		
Pine Brook Control	В	10	10	10	0	0	0	0	0		
	С	10	10	10	1	0	0	0	0		
	D	10	10	10	8	1	1	1	1		
6.25%	Α	10	10	10	10	10	10	10	10		
	В	10	10	10	10	10	10	10	10		
0.2370	С	10	10	10	10	10	10	10	10		
	D	10	10	10	10	10	10	10	10		
	Α	10	10	10	10	10	10	10	10		
12.5%	В	10	10	10	10	10	10	10	10		
12.5/0	С	10	10	10	10	10	10	10	10		
	D	10	10	10	10	10	10	10	10		
	Α	10	10	10	10	10	10	10	10		
25%	В	10	10	10	10	10	10	10	10		
2370	С	10	10	10	10	10	10	10	10		
	D	10	10	10	10	10	10	10	10		
	Α	10	10	10	10	10	10	10	10		
50%	В	10	10	10	10	10	10	10	10		
3 U%	С	10	10	10	10	10	10	10	10		
	D	10	10	10	10	10	10	10	10		
	А	10	10	10	10	10	10	10	10		
100%	В	10	10	10	10	10	10	10	10		
100/0	С	10	10	10	10	9	9	9	9		
	D	10	10	9	9	9	9	9	9		

D.O. concentration fell below 4.0 mg/L, all concentrations were aerated at <100 bubbles/minute as of:

NEW ENGLAND BIOASSAY OBSERVATION DATA FORM

05.0752101.00 19-970b 2 NF Test ID: Project # Rep D: All organisms appear healthy and normal unless noted 9 NF Pimephales promelas AS BA 7/22/19 Technician: Technician: Rep C: 7/25/19 7/26/19 Test Species: Test Date: 10 NF Date: Date: Rep B: Observations Observations Pine Brook Country Club 5 NF 쑬 ш m 4 Day Day Rep A: **Brook Control** Concentration **Brook Control** Lab Diluent Lab Diluent or Dilution Permittee: 6.25% 12.5% 12.5% 6.25% 100% 100% 25% 20% 25% 20%

F= fungus NF = no fungus SL = slightly lethargic L = lethargic VL = very lethargic TD = tangled in debris MT = missing test organism TE = technician error (organism accidentally killed by technician) SS = stuck in surface tension DW = dead above water line

NEB Issued: 8/20/19

NEW ENGLAND BIOASSAY OBSERVATION DATA FORM

Project # 05.0752101.00 19-970b Test ID: Rep D: All organisms appear healthy and normal unless noted Pimephales promelas BA 불 S 7/22/19 Technician: Technician Rep C: 7/28/19 7/29/19 Test Species: Test Date: 불 Date: Date: Rep B: Observations Observations Pine Brook Country Club щ 9 Day Daγ Rep A: Concentration **Brook Control Brook Control** Lab Diluent Lab Diluent Permittee: or Dilution 6.25% 12.5% 6.25% 12.5% 100% 100% 25% 25% 20% 20%

F= fungus NF = no fungus SL = slightly lethargic L = lethargic VL = very lethargic TD = tangled in debris MT = missing test organism TE = technician error (organism accidentally killed by technician) SS = stuck in surface tension DW = dead above water line

NEW ENGLAND BIOASSAY WEIGHT DATA FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Pine Brook	Country Club, 42 Newton Str	eet. Weston MA 02193		
NEB PROJECT #	05.0752101.00	NEB TEST NUMBER:	19-970b		
TEST START DATE	7/22/19	- WEIGHING DATE:	8/9/19		
TEST END DATE	7/29/19	<u>-</u>			
DRYING TEMPERATURE (°C)	100 ± 4	DRYING TIME:	minimum 6 hours		
ANALYST-INITIAL WEIGHTS	BA	ANALYST-FINAL WEIGHTS	AS		
		A	В		
Effluent Concentration	Replicate Number	Weight of boat (mg)	Dry Weight: Foil and Larvae (mg)		
	А	936.78	941.71		
NED Lab Synthatic Dilyant	В	932.86	939.08		
NEB Lab Synthetic Diluent	С	938.75	945.22		
	D	934.96	940.94		
	А	935.05	N/A		
Pine Brook Control	В	934.98	N/A		
Pine Brook Control	С	937.72	N/A		
	D	927.95	929.45		
	Α	928.78	935.40		
6.25%	В	924.51	931.76		
6.23%	С	931.51	938.28		
	D	926.60	933.66		
	А	926.88	933.71		
12.5%	В	928.62	935.44		
12.5%	С	927.28	933.73		
	D	928.65	934.83		
	Α	925.25	932.67		
25%	В	925.78	933.01		
23%	С	932.28	939.83		
	D	930.36	937.83		
	А	932.58	939.61		
F00/	В	925.16	932.31		
50%	С	928.04	935.25		
	D	924.30	929.87		
	А	924.62	931.95		
1000/	В	926.02	933.34		
100%	С	932.61	939.41		
	D	936.61	943.24		

		Final Weight	Initial Weight	Total Weight	Average per	Mean fish	Standard
Concentration	Rep	(mg)	(mg)	(mg)	fish (mg)	weight (mg)	Deviation
NEB Lab	1	941.71	936.78	4.93	0.493	0.5900	0.067690472
	2	939.08	932.86	6.22	0.622		
Synthetic Diluent	3	945.22	938.75	6.47	0.647		
Diluent	4	940.94	934.96	5.98	0.598		
	1	0.00	0.00	0.00	0.000	0.0375	0.075
Pine Brook	2	0.00	0.00	0.00	0.000		
Control	3	0.00	0.00	0.00	0.000		
	4	929.45	927.95	1.50	0.150		
	1	935.40	928.78	6.62	0.662	0.6925	0.028337255
6 35%	2	931.76	924.51	7.25	0.725		
6.25%	3	938.28	931.51	6.77	0.677		
	4	933.66	926.60	7.06	0.706		
	1	933.71	926.88	6.83	0.683	0.6570	0.03144307
12 50/	2	935.44	928.62	6.82	0.682		
12.5%	3	933.73	927.28	6.45	0.645		
	4	934.83	928.65	6.18	0.618		
	1	932.67	925.25	7.42	0.742	0.7418	0.013598407
25%	2	933.01	925.78	7.23	0.723		
25%	3	939.83	932.28	7.55	0.755		
	4	937.83	930.36	7.47	0.747		
Y	1	939.61	932.58	7.03	0.703	0.6740	0.078358152
F09/	2	932.31	925.16	7.15	0.715		
50%	3	935.25	928.04	7.21	0.721		
	4	929.87	924.30	5.57	0.557		
	1	931.95	924.62	7.33	0.733	0.7020	0.035898004
1000/	2	933.34	926.02	7.32	0.732		
100%	3	939.41	932.61	6.80	0.680		
1	4	943.24	936.61	6.63	0.663		

Report Date: Test Code/ID: 14 Aug-19 15:37 (p 1 of 6) 19-970b / 18-6586-4961

								Т	est Code/II):	19-970b /	18-6586-496
Fathea	d Minn	ow 7-d Larval S	urvival and	Growt	h Test						New Engla	nd Bioassay
Analys	is ID:	15-6957-2954	End	point:	2d Survival Ra	te		С	ETIS Versi	on: CETIS	v1.9.4	
Analyz	ed:	14 Aug-19 15:36	6 Ana	lysis:	Linear Interpolation (ICPIN)				tatus Leve	l: 1		
Batch	ID:	06-4674-0994	Test	t Type:	Growth-Surviva	al (7d)		А	nalyst:			
Start D	ate:	22 Jul-19 14:29	Prof	ocol:	EPA/821/R-02-	013 (2002)		D	iluent:	Laboratory W	ater	
Ending	Date:	28 Jul-19 12:55	Spe	cies:	Pimephales pro	omelas		В	rine:	Not Applicable	Э	
Test Le	ength:	5d 22h	Tax	on:	Actinopterygii			S	ource:	In-House Cult	ure	Age: <24
Sample	e ID:	13-1259-3008	Cod	e:	4E3C9470			P	roject:			
Sample	e Date:	22 Jul-19 09:08	Mate	erial:	Not Applicable			S	ource:	Pine Brook Co	ountry Club	(MA0032212
		22 Jul-19 12:00	CAS	(PC):				S	tation:			
Sample	e Age:	5h	Clie	nt:	Pine Brook Co	untry Club						
Linear	Interpo	olation Options										
X Tran	sform	Y Transform			Resamples	Exp 95%						
Log(X)		Linear	1889	9320	200	Yes	Two-	-Point Int	erpolation			
Point E	Estimat	es										
Level	%	95% LCL		TU	95% LCL							
LC50	>100	n/a	n/a	<1	n/a 	n/a						
2d Survival Rate Summary			Calculated Variate(A/I			te(A/B)			Isote	onic Variate		
Conc-%	%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effe	ct A/B	Mean	%Effect
0		D	4	1,000		1.0000	0.0000	0.00%		40/40	1	0.0%
6.25			4	1.000		1.0000	0.0000	0.00%		40/40	1	0.0%
12.5			4	1.000		1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
25			4	1.000		1.0000	0.0000	0.00%		40/40	1	0.0%
50			4	1.000		1.0000	0.0000	0.00%		40/40	1	0.0%
100			4	0.975	0 0.9000	1.0000	0.0500	5,13%	2.5%	39/40	0.975	2.5%
2d Sur	vival Ra	ate Detail										
Conc-%	6	Code	Rep 1	Rep 2		Rep 4						
0		D	1.0000	1.000	0 1.0000	1.0000						
6.25			1,0000	1.000	0 1,0000	1.0000						
12.5			1,0000	1.000	0 1.0000	1.0000						
25			1.0000	1.000	0 1,.0000	1.0000						
50			1.0000	1.000	0 1.0000	1.0000						
100			1.0000	1:000	0 1.0000	0.9000						
2d Sur	vival Ra	ate Binomials										
Conc-%	6	Code	Rep 1	Rep 2	Rep 3	Rep 4						
0		D	10/10	10/10	10/10	10/10						
6.25			10/10	10/10	10/10	10/10						
12.5			10/10	10/10		10/10						
25			10/10	10/10		10/10						
50			10/10	10/10		10/10						
100			10/10	10/10		9/10						
100			10/10	10/10	10/10	9/10						

000-222-335-4

CETIS™ v1.9.4.1

QA:_ Analyst:___

36 of 85

Report Date: Test Code/ID: 14 Aug-19 15:37 (p 2 of 6) 19-970b / 18-6586-4961

Fathead Minnow 7-d Larval Survival and Growth Test

New England Bioassay

Analyzed:

Analysis ID: 15-6957-2954 14 Aug-19 15:36

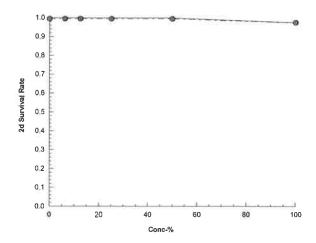
Endpoint: 2d Survival Rate Analysis: Linear Interpolation (ICPIN)

Status Level:

CETIS Version: CETISv1.9.4

1

Graphics



Report Date: Test Code/ID: 14 Aug-19 15:37 (p 3 of 6) 19-970b / 18-6586-4961

									Test Code/	ID:		19-970b /	18-6586-496
Fathead	d Minr	now 7-d Larval S	urvival and	Growt	h Test							New Engla	nd Bioassay
Analysi	is ID:	00-5512-8647	End	point:	7d Survival R	ate			CETIS Vers	ion:	CETIS	/1.9.4	
Analyze	ed:	14 Aug-19 15:36	S Ana	lysis:	Linear Interpo	olation (ICPIN)		Status Leve	el:	1		
Batch I	D:	06-4674-0994	Test	Type:	Growth-Survi	val (7d)			Analyst:				
Start Da	ate:	22 Jul-19 14:29		ocol:	EPA/821/R-0				Diluent:	Labo	oratory Wa	ater	
Ending	Date:	28 Jul-19 12:55	Spe	cies:	Pimephales p	romelas			Brine:		Applicable		
Test Le	ength:	5d 22h	Taxe	on:	Actinopterygi	i			Source:	In-H	ouse Culti	ure	Age: <24
Sample	D:	13-1259-3008	Cod	e:	4E3C9470				Project:				
Sample	Date:	22 Jul-19 09:08	Mate	erial:	Not Applicabl	е			Source:	Pine	Brook Co	ountry Club	(MA003221
Receipt	t Date:	22 Jul-19 12:00	CAS	(PC):					Station:				
Sample	Age:	5h	Clie	nt:	Pine Brook C	ountry Club							
Linear	Interpo	olation Options											
X Trans	sform	Y Transform	See	d	Resamples	Exp 95%		thod					
Log(X)		Linear	1425	5720	200	Yes	Tw	ro-Point I	Interpolation				
Test Ac	ceptal	bility Criteria	TAC L	imits									
Attribut	te	Test Stat	Lower	Uppe	r Overlap	Decision							
Control	Resp	0.875	0,8	>>	Yes	Passes C	riteria						
Point E	stimat	es											
Level	%	95% LCL	95% UCL	TU	95% LC	L 95% UCL							
LC50	>100	n/a	n/a	<1	n/a	n/a							
7d Surv	vival R	ate Summary				Calcu	ılated Var	riate(A/B	i)			Isoto	nic Variate
Conc-%	6	Code	Count	Mean	Min	Max	Std Dev	CV%	% %Eff	ect	A/B	Mean	%Effect
0		D	4	0.875		1.0000	0.1258	14.3			35/40	0.975	0.0%
6.25			4	1.000		1.0000	0.0000	0.00			40/40	0.975	0.0%
12.5			4	1.000		1,0000	0.0000	0.00			40/40	0.975	0.0%
25			4	1.000		1.0000	0.0000	0.00			40/40	0.975	0.0%
50 400			4	1.000		1.0000	0.0000	0.00			40/40	0.975	0.0%
100			4	0.950	0.9000	1.0000	0.0577	6.08	% -8.57	%	38/40	0.95	2.56%
		ate Detail											
Conc-%	Ó	Code	Rep 1	Rep 2		Rep 4							
)		D	0.7000	0.900		1.0000							
6.25			1.0000	1.000		1.0000							
12.5			1.0000	1.000		1.0000							
25			1.0000	1.000		1.0000							
50			1.0000	1.000		1.0000							
100			1:0000	1.000	0.9000	0.9000							
		ate Binomials											
Conc-%	o ·	Code	Rep 1	Rep 2		Rep 4							
0		D	10/10	10/10		10/10						30	
6.25			10/10	10/10		10/10							
12.5			10/10	10/10		10/10							
25			10/10	10/10	10/10	10/10							
50			10/10	10/10		10/10							
100			10/10	10/10	10/10	9/10							

000-222-335-4 CETIS™ v1.9.4.1 Analyst:_____ QA:__

Report Date: Test Code/ID: 14 Aug-19 15:37 (p 4 of 6) 19-970b / 18-6586-4961

Fathead Minnow 7-d Larval Survival and Growth Test

New England Bioassay

Analysis ID: 00-5512-8647

Endpoint: 7d Survival Rate

CETIS Version: CETISv1.9.4

Analyzed: 14 A

14 Aug-19 15:36

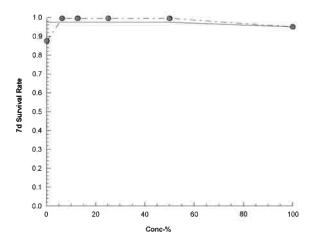
6 Analysis:

rsis: Linear Interpolation (ICPIN)

Status Level:

: 1

Graphics



Analyst:_____ QA:____

39 of 85

25

50

100

0.742

0.703

0.733

0.723

0.715

0.732

0.755

0.721

0.68

0.747

0.557

0.663

Report Date: Test Code/ID: 14 Aug-19 15:37 (p 5 of 6) 19-970b / 18-6586-4961

											est code	MD.		19-5	7 00 7	10-0300-430
Fathea	d Minn	now 7-d Larval S	urvival and	Grow	h Te	st								New E	nglaı	nd Bioassay
Analys	is ID:	04-0022-8681	End	point:	Mea	an Dry Biom	ass-mg			(CETIS Ver	sion:	CET	ISv1.9.4		
Analyz	ed:	14 Aug-19 15:37	7 Ana	lysis:	Line	ear Interpola	tion (ICPIN	V)			Status Lev	/el:	1			
Batch	ID:	06-4674-0994	Test	Туре:	Gro	wth-Surviva	l (7d)			-	Analyst:					
Start D	ate:	22 Jul-19 14:29	Prot	ocol:	EP/	A/821/R-02-0	013 (2002))		1	Diluent:	Labo	ratory	Water		
Ending	Date:	28 Jul-19 12:55	Spe	cies:	Pim	nephales pro	melas			i	3rine:	Not A	Applica	ıble		
Test Le	ength:	5d 22h	Taxo	on:	Act	inopterygii					Source:	In-Ho	ouse C	ulture		Age: <24
Sample	e ID:	13-1259-3008	Cod	e:	4E3	3C9470				i	Project:					
Sample	e Date:	22 Jul-19 09:08	Mate	erial:	Not	Applicable				:	Source:	Pine	Brook	Country	Club	(MA0032212
Receip	t Date:	: 22 Jul-19 12:00	CAS	(PC):						:	Station:					
Sample	e Age:	5h	Clie	nt:	Pin	e Brook Cou	ntry Club									
Linear	Interpo	olation Options														
X Tran	sform	Y Transform	See	4	Res	samples	Exp 95%	% CL	Meth	od						
Linear		Linear	1650	277	200		Yes		Two-F	Point In	terpolation	1				
Test A	cceptal	bility Criteria	TAC L	imits												
Attribu	ite	Test Stat		Uppe	r	Overlap	Decision	1								
Control	l Resp	0.59	0.25	>>		Yes	Passes (Criteria								
Point E	Estimat	tes	-													
Level	%	95% LCL	95% UCL	TU		95% LCL	95% UCL	_								
IC25	>100	n/a	n/a	<1		n/a	n/a									
IC50	>100	n/a	n/a	<1		n/a	n/a									
Mean [Dry Bio	mass-mg Summ	nary				Ca	alculat	ed Var	iate					Isoto	nic Variate
Conc-9	-	Code	Count	Mean		Min	Max	Std	Dev	CV%	%E1	fect		Me	ean	%Effect
0		D	4	0.59		0.493	0.647	0.06	769	11.47				0.0	3762	0.0%
6.25			4	0.692	5	0.662	0.725	0.02	834	4.09%	6 -1 7.	37%		0.0	6762	0.0%
12.5			4	0.657		0.618	0.683	0.03	144	4.79%	-11 .	36%		0.0	6762	0.0%
25			4	0.741	7	0.723	0.755	0.01	36	1.83%	-25	72%		0.0	6762	0.0%
50			4	0.674		0.557	0.721	0.07	836	11.63	% -14.	24%		0.0	3762	0.0%
100			4	0.702		0.663	0.733	0.03	59	5.11%	-18.	98%		0.0	5762	0.0%
Mean [Ory Bio	mass-mg Detail														
Conc-%	%	Code	Rep 1	Rep 2	2	Rep 3	Rep 4									
0		D	0.493	0.622		0.647	0.598									
6.25			0.662	0.725		0.677	0.706									
12.5			0.683	0.682		0.645	0.618									
			3.000			3.0.0	5.575									

000-222-335-4	CETIS™ v1.9.4.1	Analyst:	QA:

Report Date: Test Code/ID: 14 Aug-19 15:37 (p 6 of 6) 19-970b / 18-6586-4961

Fathead Minnow 7-d Larval Survival and Growth Test

New England Bioassay

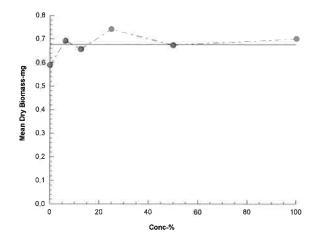
Analyzed:

Analysis ID: 04-0022-8681 14 Aug-19 15:37 Endpoint: Mean Dry Biomass-mg Linear Interpolation (ICPIN) Analysis:

CETIS Version: Status Level:

CETISv1.9.4 1

Graphics



Analyst:_

41 of 85

NEB Issued: 8/20/19

Report Date: Test Code/ID: 14 Aug-19 15:37 (p 1 of 4) 19-970b / 18-6586-4961

										NI.	ow Englar	nd Bionesa
Fathead Minr	now 7-d Larval S	Survival an	id Growti	h Test	t					N	ew Englar	iu bivassa
Analysis ID:	11-5794-1110	En	dpoint:	7d Su	urvival Rat	e		CET	IS Version	: CETISv1	.9.4	
Analyzed:	14 Aug-19 15:3	7 A n	alysis:	Nonp	arametric-	Control vs	Treatments	State	us Level:	1		
Batch ID:	06-4674-0994	Te	st Type:	Grow	th-Surviva	l (7d)		Anal	yst:			
Start Date:	22 Jul-19 14:29	Pro	otocol:	EPA/	821/R-02-	013 (2002)		Dilu	ent: La	boratory Wat	er	
Ending Date:	28 Jul-19 12:55	Sp	ecies:	Pime	phales pro	melas		Brin	e: No	t Applicable		
Test Length:	5d 22h	Ta	xon:	Actino	opterygii			Soul	rce: In-	House Cultur	re	Age: <2
Sample ID:	13-1259-3008	Co	ode:	4E3C	9470			Proje	ect:			
-	22 Jul-19 09:08	Ma	iterial:	Not A	Applicable			Soul		ne Brook Cou	intry Club	(MA00322
•	: 22 Jul-19 12:00		S (PC):		•			Stati		9	•	`
Sample Age:			ient:	Pine I	Brook Cou	intry Club						
Data Transfo	rm	Alt Hyp						NOEL	LOEL	TOEL	TU	PMSD
Angular (Corre	ected)	C > T						100	>100	n/a	1	10.36%
Steel Manv-O	ne Rank Sum T	est										
	vs Conc-%		Test S	Stat (Critical	Ties DI	P-Type	P-Value	Decisio	n(α:5%)		
Dilution Water	6.25		24		10	1 6	Asymp	0.9989		nificant Effec	t	
	12.5		24		10	1 6	Asymp	0.9989		nificant Effec		
	25		24	•	10	1 6	Asymp	0.9989	Non-Sigi	nificant Effec	t	
	50		24	•	10	1 6	Asymp	0.9989	_	nificant Effec		
	100		21	•	10	2 6	Asymp	0.9778	Non-Sig	nificant Effec	t	
Test Acceptal	bility Criteria	TAC	Limits									
Attribute	Test Stat		Upper	r (Overlap	Decision						
Control Resp	0.875	~ ~										
	0.0.0	8.0	>>	`	Yes	Passes C	riteria					
		0.8	>>		Yes	Passes C	riteria					
ANOVA Table			>> Mean			Passes C	riteria F Stat	P-Value	Decisio	n(α:5%)		
ANOVA Table	•			Squa				P-Value 0.0193		n(α:5%) nt Effect		
ANOVA Table Source Between	Sum Squ		Mean	Squa 6076		DF	F Stat					
ANOVA Table Source Between Error	Sum Squ 0.118038		Mean 0.0236	Squa 6076		DF 5	F Stat					
ANOVA Table Source Between Error	Sum Squ 0.118038 0.117373 0.235411		Mean 0.0236	Squa 6076		DF 5 18	F Stat					
ANOVA Table Source Between Error Total Distributional	Sum Squ 0.118038 0.117373 0.235411		Mean 0.0236	Squa 6076		DF 5 18	F Stat 3.62			nt Effect		
ANOVA Table Source Between Error Total Distributional	Sum Squ 0.118038 0.117373 0.235411 I Tests Test		Mean 0.0236 0.0065	Squa 6076 5207		DF 5 18 23	F Stat 3.62	0.0193	Significa Decision	nt Effect		
ANOVA Table Source Between Error Total Distributional Attribute Variances	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene E	ares	Mean 0.0236 0.0065	Squa 5076 5207	re	DF 5 18 23 Test Stat	F Stat 3.62 Critical	0.0193 P-Value	Significa Decision	nt Effect n(α:1%) Variances		
ANOVA Table Source Between Error Total Distributional Attribute Variances Variances	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene E Mod Leve	ares quality of V	Mean 0.0236 0.0065 (ariance T	Squar 6076 5207	re	DF 5 18 23 Test Stat 5.513	F Stat 3.62 Critical 4.248	0.0193 P-Value 0.0030	Decision Unequal Equal Va	nt Effect n(α:1%) Variances	ion	
ANOVA Table Source Between Error Fotal Distributional Attribute Variances Variances Distribution	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene E Mod Leve	ares quality of V ne Equality	Mean 0.0236 0.0065 (ariance T	Squar 6076 5207	re	DF 5 18 23 Test Stat 5.513 3.513	F Stat 3.62 ————————————————————————————————————	P-Value 0.0030 0.0217	Decision Unequal Equal Va	nt Effect n(α:1%) Variances ariances	ion	
ANOVA Table Source Between Error Fotal Distributional Attribute Variances Variances Distribution	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene Edition Mod Leve Shapiro-V	ares quality of V ne Equality	Mean 0.0236 0.0065 (ariance T	Squar 5076 5207 Fest nce Te	re	DF 5 18 23 Test Stat 5.513 3.513	F Stat 3.62 Critical 4.248 4.248 0.884	P-Value 0.0030 0.0217	Decision Unequal Equal Va	nt Effect n(α:1%) Variances ariances	ion	%Effect
ANOVA Table Source Between Error Total Distributional Attribute Variances Variances Distribution 7d Survival R Conc-%	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene Ed Mod Leve Shapiro-V	quality of V ne Equality Vilk W Norr	Mean 0.0236 0.0065 'ariance T y of Varian	Squar 5076 5207 Test nice Test	re	DF 5 18 23 Test Stat 5.513 3.513 0.7179	F Stat 3.62 Critical 4.248 4.248 0.884	P-Value 0.0030 0.0217 1.8E-05	Decision Unequal Equal Va	nt Effect n(α:1%) Variances ariances mal Distributi		%Effect 0.00%
ANOVA Table Source Between Error Total Distributional Attribute Variances Variances Distribution 7d Survival R Conc-%	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene E Mod Leve Shapiro-V tate Summary Code	quality of V ne Equality Vilk W Norr	Mean 0.0236 0.0065 'ariance T y of Varian mality Tes	Squar 5076 5207 Fest nice Test	est	DF 5 18 23 Test Stat 5.513 3.513 0.7179	F Stat 3.62 Critical 4.248 4.248 0.884 Median	P-Value 0.0030 0.0217 1.8E-05	Decision Unequal Equal Va Non-Nor	nt Effect n(α:1%) Variances ariances mal Distributi	CV%	0.00%
ANOVA Table Source Between Error Total Distributional Attribute Variances Variances Distribution 7d Survival R Conc-% 0 6.25	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene E Mod Leve Shapiro-V tate Summary Code	quality of V ne Equality Vilk W Norr	Mean 0.0236 0.0065 Variance T y of Varian mality Tes Mean 0.8750	Squar 5076 5207 Test nce Test	est 95% LCL 0.6748	DF 5 18 23 Test Stat 5.513 3.513 0.7179 95% UCL 1.0000	F Stat 3.62 Critical 4.248 4.248 0.884 Median 0.9000	P-Value 0.0030 0.0217 1.8E-05	Decision Unequal Equal Va Non-Nor	nt Effect n(α:1%) Variances ariances mal Distributi Std Err 0.0629	CV% 14.38%	0.00% -14.29%
ANOVA Table Source Between Error Total Distributional Attribute Variances Variances Distribution 7d Survival R Conc-% 0 6.25	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene E Mod Leve Shapiro-V tate Summary Code	quality of V ne Equality Vilk W Norr	Mean 0.0236 0.0065 fariance T y of Varian mality Tes Mean 0.8750 1.0000	Squar 5076 5207 Test nice Test	95% LCL 0.6748 1.0000	DF 5 18 23 Test Stat 5.513 3.513 0.7179 95% UCL 1.0000 1.0000	F Stat 3.62 Critical 4.248 4.248 0.884 Median 0.9000 1.0000	P-Value 0.0030 0.0217 1.8E-05 Min 0.7000 1.0000	Decision Unequal Equal Va Non-Nor Max 1.0000 1.0000	nt Effect n(a:1%) Variances ariances mal Distributi Std Err 0.0629 0.0000	CV% 14.38% 0.00%	0.00% -14.29% -14.29%
ANOVA Table Source Between Error Fotal Distributional Attribute Variances Variances Distribution 7d Survival R Conc-% 0 3.25 12.5	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene E Mod Leve Shapiro-V tate Summary Code	quality of V ne Equality Vilk W Norr Count 4 4 4	Mean 0.0236 0.0065 Variance T y of Varian mality Tes Mean 0.8750 1.0000	Squar 5076 5207 Test nice Test	95% LCL 0.6748 1.0000 1.0000	DF 5 18 23 Test Stat 5.513 3.513 0.7179 95% UCL 1.0000 1.0000 1.0000	F Stat 3.62 Critical 4.248 4.248 0.884 Median 0.9000 1.0000 1.0000	P-Value 0.0030 0.0217 1.8E-05 Min 0.7000 1.0000 1.0000	Decision Unequal Equal Va Non-Nor Max 1.0000 1.0000	nt Effect n(a:1%) Variances ariances mal Distributi Std Err 0.0629 0.0000 0.0000	CV% 14.38% 0.00% 0.00%	0,00% -14.29% -14.29% -14.29%
ANOVA Table Source Between Error Total Distributional Attribute Variances Distribution 7d Survival R Conc-% 0 6.25 12.5 25	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene E Mod Leve Shapiro-V tate Summary Code	quality of V ne Equality Vilk W Norr Count 4 4 4 4	Mean 0.0236 0.0065 (ariance T y of Varian mality Tes Mean 0.8750 1.0000 1.0000	Squar 6076 5207 Test nice Test	95% LCL 0.6748 1.0000 1.0000	DF 5 18 23 Test Stat 5.513 3.513 0.7179 95% UCL 1.0000 1.0000 1.0000 1.0000	F Stat 3.62 Critical 4.248 4.248 0.884 Median 0.9000 1.0000 1.0000 1.0000 1.0000	P-Value 0.0030 0.0217 1.8E-05 Min 0.7000 1.0000 1.0000 1.0000	Decision Unequal Equal Va Non-Non Max 1.0000 1.0000 1.0000	nt Effect n(a:1%) Variances ariances mal Distributi Std Err 0.0629 0.0000 0.0000 0.0000	CV% 14.38% 0.00% 0.00% 0.00%	0,00% -14.29% -14.29% -14.29%
ANOVA Table Source Between Error Fotal Distributional Attribute Variances Variances Distribution 7d Survival R Conc-% 0 5.25 12.5 25 50 100	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene E Mod Leve Shapiro-V tate Summary Code	quality of V ne Equality Vilk W Norr Count 4 4 4 4 4 4	Mean 0.0236 0.0065 Variance T y of Varian mality Tes Mean 0.8750 1.0000 1.0000 0.9500	Squar 6076 5207 Test nice Test	95% LCL 0.6748 1.0000 1.0000 1.0000	DF 5 18 23 Test Stat 5.513 3.513 0.7179 95% UCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	F Stat 3.62 Critical 4.248 4.248 0.884 Median 0.9000 1.0000 1.0000 1.0000 1.0000	P-Value 0.0030 0.0217 1.8E-05 Min 0.7000 1.0000 1.0000 1.0000 1.0000	Decision Unequal Equal Va Non-Non Max 1.0000 1.0000 1.0000 1.0000	nt Effect n(a:1%) Variances ariances mal Distributi Std Err 0.0629 0.0000 0.0000 0.0000 0.0000	CV% 14.38% 0.00% 0.00% 0.00%	0.00% -14.29% -14.29% -14.29%
ANOVA Table Source Between Error Fotal Distributional Attribute /ariances /ariances Distribution 7d Survival R Conc-% 0 3.25 12.5 25 100 Angular (Corr	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene E Mod Leve Shapiro-V ate Summary Code D	quality of V ne Equality Vilk W Norr Count 4 4 4 4 4 4	Mean 0.0236 0.0065 Variance T y of Varian mality Tes Mean 0.8750 1.0000 1.0000 0.9500	Squar 5076 5207 Test nice Test	95% LCL 0.6748 1.0000 1.0000 1.0000	DF 5 18 23 Test Stat 5.513 3.513 0.7179 95% UCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	F Stat 3.62 Critical 4.248 4.248 0.884 Median 0.9000 1.0000 1.0000 1.0000 1.0000	P-Value 0.0030 0.0217 1.8E-05 Min 0.7000 1.0000 1.0000 1.0000 1.0000	Decision Unequal Equal Va Non-Non Max 1.0000 1.0000 1.0000 1.0000	nt Effect n(a:1%) Variances ariances mal Distributi Std Err 0.0629 0.0000 0.0000 0.0000 0.0000	CV% 14.38% 0.00% 0.00% 0.00%	0.00% -14.29% -14.29% -14.29% -14.29% -8.57%
ANOVA Table Source Between Error Total Distributional Attribute Variances Variances Distribution 7d Survival R Conc-% 10 5.25 12.5 25 100 Angular (Corr	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene Edit Mod Leve Shapiro-V Tate Summary Code D	quality of V ne Equality Vilk W Norr Count 4 4 4 4 4 4 4 4 4 4 4 med Sumi	Mean 0.0236 0.0065 /ariance T y of Varian mality Tes Mean 0.8750 1.0000 1.0000 0.9500 mary	Squar 5076 5207 Test nice Test	95% LCL 0.6748 1.0000 1.0000 1.0000 0.8581	DF 5 18 23 Test Stat 5.513 3.513 0.7179 95% UCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	F Stat 3.62 Critical 4.248 4.248 0.884 Median 0.9000 1.0000 1.0000 1.0000 0.9500	0.0193 P-Value 0.0030 0.0217 1.8E-05 Min 0.7000 1.0000 1.0000 1.0000 0.9000	Decision Unequal Equal Va Non-Non Max 1.0000 1.0000 1.0000 1.0000 1.0000	nt Effect n(a:1%) Variances ariances mal Distributi Std Err 0.0629 0.0000 0.0000 0.0000 0.0000 0.0000	CV% 14.38% 0.00% 0.00% 0.00% 0.00% 6.08%	0.00% -14.29% -14.29% -14.29% -14.29% -8.57%
ANOVA Table Source Between Error Total Distributional Attribute Variances Variances Distribution 7d Survival R Conc-% 0 6.25 12.5 25 50 100 Angular (Corr	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene E Mod Leve Shapiro-V ate Summary Code D	quality of V ne Equality Vilk W Norr Count 4 4 4 4 4 4 7 med Summ	Mean 0.0236 0.0065 /ariance T / of Varian mality Tes Mean 0.8750 1.0000 1.0000 1.0000 0.9500 mary Mean	Squar 5076 5207 Fest nice Test 100 (00 00 00 00 00 00 00 00 00 00 00 00	95% LCL 95% LCL 0.6748 1.0000 1.0000 1.0000 0.8581	DF 5 18 23 Test Stat 5.513 3.513 0.7179 95% UCL 1.0000 1.0000 1.0000 1.0000 1.0000 95% UCL	F Stat 3.62 Critical 4.248 4.248 0.884 Median 0.9000 1.0000 1.0000 1.0000 1.0000 Median	P-Value 0.0030 0.0217 1.8E-05 Min 0.7000 1.0000 1.0000 1.0000 0.9000	Decision Unequal Equal Va Non-Non Max 1.0000 1.0000 1.0000 1.0000 Max	nt Effect n(a:1%) Variances ariances mal Distributi Std Err 0.0629 0.0000 0.0000 0.0000 0.0000 0.00289 Std Err	CV% 14.38% 0.00% 0.00% 0.00% 6.08%	0.00% -14.29% -14.29% -14.29% -14.29% -8.57% %Effect 0.00%
ANOVA Table Source Between Error Total Distributional Attribute Variances Variances Distribution 7d Survival R Conc-% 0 6.25 12.5 25 60 100 Angular (Corr	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene E Mod Leve Shapiro-V ate Summary Code D	quality of V ne Equality Vilk W Norr Count 4 4 4 4 4 4 7 med Summ Count 4	Mean 0.0236 0.0065 /ariance T / of Varian mality Tes Mean 0.8750 1.0000 1.0000 1.0000 0.9500 mary Mean 1.225	Squar 5076 5207 Fest nce Test 100 (00 00 00 00 00 00 00 00 00 00 00 00	95% LCL 0.6748 1.0000 1.0000 1.0000 0.8581 95% LCL 0.9485	DF 5 18 23 Test Stat 5.513 3.513 0.7179 95% UCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	F Stat 3.62 Critical 4.248 4.248 0.884 Median 0.9000 1.0000 1.0000 1.0000 1.0000 0.9500 Median 1.249	P-Value 0.0030 0.0217 1.8E-05 Min 0.7000 1.0000 1.0000 1.0000 0.9000 Min 0.9912	Decision Unequal Equal Va Non-Non Max 1,0000 1,0000 1,0000 1,0000 1,0000 1,0000 1,0000 1,0000	nt Effect n(a:1%) Variances ariances mal Distributi Std Err 0.0629 0.0000 0.0000 0.0000 0.0000 0.00289 Std Err 0.08699	CV% 14.38% 0.00% 0.00% 0.00% 6.08% CV% 14.20%	0.00% -14.29% -14.29% -14.29% -14.29% -8.57% %Effect 0.00% -15.24%
ANOVA Table Source Between Error Total Distributional Attribute Variances Distribution 7d Survival R Conc-% 0 6.25 12.5 25 50 100 Angular (Corr	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene E Mod Leve Shapiro-V ate Summary Code D	quality of V ne Equality Vilk W Norr Count 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Mean 0.0236 0.0065 Variance T y of Varian mality Tes Mean 0.8750 1.0000 1.0000 1.0000 0.9500 mary Mean 1.225 1.412	Squar 5076 5207 Fest nice Test 100 (00 00 00 00 00 00 00 00 00 00 00 00	95% LCL 0.6748 1.0000 1.0000 1.0000 0.8581 95% LCL 0.9485 1.412	DF 5 18 23 Test Stat 5.513 3.513 0.7179 95% UCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.502 1.412	F Stat 3.62 Critical 4.248 4.248 0.884 Median 0.9000 1.0000 1.0000 1.0000 0.9500 Median 1.249 1.412	P-Value 0.0030 0.0217 1.8E-05 Min 0.7000 1.0000 1.0000 1.0000 0.9000 Min 0.9912 1,412	Decision Unequal Equal Va Non-Nor Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.412 1.412	nt Effect n(a:1%) Variances ariances mal Distributi Std Err 0.0629 0.0000 0.0000 0.0000 0.0000 0.0289 Std Err 0.08699 0	CV% 14.38% 0.00% 0.00% 0.00% 6.08% CV% 14.20% 0.00%	0.00% -14.29% -14.29% -14.29% -14.29% -8.57% %Effect 0.00% -15.24% -15,24%
ANOVA Table Source Between Error Total Distributional Attribute Variances Distribution 7d Survival R Conc-% 0 6.25 12.5 25 50 100	Sum Squ 0.118038 0.117373 0.235411 I Tests Test Levene E Mod Leve Shapiro-V ate Summary Code D	quality of V ne Equality Vilk W Norr Count 4 4 4 4 4 7 med Summed Count 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Mean 0.0236 0.0065 Variance T y of Varian mality Tes Mean 0.8750 1.0000 1.0000 0.9500 mary Mean 1.225 1.412 1.412	Squar 5076 5207 Test nice Test	95% LCL 0.6748 1.0000 1.0000 1.0000 0.8581 95% LCL 0.9485 1.412 1.412	DF 5 18 23 Test Stat 5.513 3.513 0.7179 95% UCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.412 1.412	F Stat 3.62 Critical 4.248 4.248 0.884 Median 0.9000 1.0000 1.0000 1.0000 0.9500 Median 1.249 1.412 1.412	P-Value 0.0030 0.0217 1.8E-05 Min 0.7000 1.0000 1.0000 1.0000 0.9000 Min 0.9912 1.412 1.412	Decision Unequal Equal Va Non-Non Max 1.0000 1.0000 1.0000 1.0000 1.0000 Max 1.412 1.412 1.412	nt Effect n(a:1%) Variances ariances mal Distributi Std Err 0.0629 0.0000 0.0000 0.0000 0.0000 0.0289 Std Err 0.08699 0	CV% 14.38% 0.00% 0.00% 0.00% 6.08% CV% 14.20% 0.00% 0.00%	0.00% -14.29% -14.29% -14.29% -14.29% -8.57%

000-222-335-4 CETIS™ v1.9.4.1 Analyst:_____ QA:____

42 of 85

Report Date: Test Code/ID:

14 Aug-19 15:37 (p 2 of 4) 19-970b / 18-6586-4961

Fathead Minnow 7-d Larval Survival and Growth Test

New England Bioassay

Analysis ID:11-5794-1110Endpoint:7d Survival RateCETIS Version:CETISv1.9.4Analyzed:14 Aug-19 15:37Analysis:Nonparametric-Control vs TreatmentsStatus Level:1

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.7000	0.9000	0.9000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	0.9000	0.9000

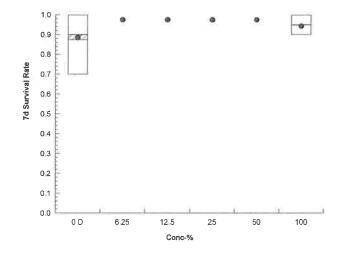
Angular (Corrected) Transformed Detail

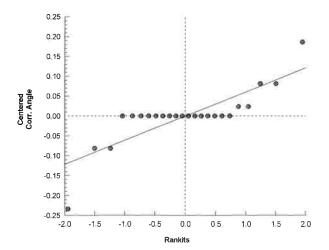
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.9912	1,249	1.249	1.412
6.25		1.412	1.412	1.412	1,412
12.5		1,412	1.412	1.412	1,412
25		1.412	1.412	1.412	1,412
50		1.412	1.412	1.412	1.412
100		1.412	1.412	1.249	1.249

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	7/10	9/10	9/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
100		10/10	10/10	9/10	9/10

Graphics





000-222-335-4 CETIS™

CETIS™ v1.9.4.1 43 of 85

Analyst:_____ QA:____

NEB Issued: 8/20/19

Report Date: Test Code/ID: 14 Aug-19 15:37 (p 3 of 4) 19-970b / 18-6586-4961

Fathead Minno	w 7-d Larval Sı	urvival and	d Growth Te	est					Ne	w Englan	d Bioassay
Analysis ID: 0	1-7843-7455	Enc	dpoint: Me	an Dry Biom	ass-mg		CET	S Versior	n: CETISv1.	9.4	
Analyzed: 1	4 Aug-19 15:37	Ana	alysis: Pa	rametric-Cor	ntrol vs Trea	tments	State	us Level:	1		
Batch ID: 0	6-4674-0994	Tes	t Type: Gro	owth-Surviva	ıl (7d)		Anal	yst:			
Start Date: 2	2 Jul-19 14:29			A/821/R-02-			Dilue	-	boratory Wate	er	
Ending Date: 2	8 Jul-19 12:55	Spe	ecies: Pin	nephales pro	melas		Brine	e: No	ot Applicable		
Test Length: 5	d 22h	Tax	on: Ac	tinopterygii			Soul	rce: In-	House Culture	•	Age: <24
Sample ID: 1	3-1259-3008	Cod	de: 4E	3C9470			Proje	ect:			
Sample Date: 2	2 Jul-19 09:08	Mat	terial: No	t Applicable			Soui		ne Brook Cou	ntry Club	(MA003221
Receipt Date: 2		CAS	S (PC):	• •			Stati	on:		•	•
Sample Age: 5	h	Clie	ent: Pin	ne Brook Cou	untry Club						
Data Transform		Alt Hyp					NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T				-	100	>100	n/a	1	13,93%
Dunnett Multipl	e Comparison	Test									
Control vs			Test Stat	Critical	MSD DF	P-Type	P-Value	Decisio	n(a:5%)		
Dilution Water	6.25		-3.002	2.407	0.082 6	CDF	1.0000		nificant Effect		
	12.5		-1.962	2.407	0.082 6	CDF	0.9990	_	nificant Effect		
	25		-4.445	2.407	0.082 6	CDF	1.0000	_	nificant Effect		
	50		-2.46	2.407	0.082 6	CDF	0.9998		nificant Effect		
	100		-3.281	2.407	0.082 6	CDF	1.0000	_	nificant Effect		
Test Acceptabil	itv Criteria	T401	114								
Attribute	Test Stat	TAC L	Imits Upper	Overlap	Decision						
Control Resp	0.59	0.25	>>	Yes	Passes Cr	riteria					
ANOVA Table											
ANOVA TABLE											
Source	Sum Saus	res	Mean Sa	uare	DE	E Stat	P-Value	Decisio	n/a:5%\		
	Sum Squa 0.0521286		Mean Sq		DF 5	F Stat	P-Value 0.0080	Decision Significa	<u> </u>		
Between	0.0521286		0.010425	7	5	F Stat 4,472	P-Value 0.0080		n(α:5%) int Effect		
Between Error				7					<u> </u>		
Between Error Total	0.0521286 0.0419623 0.0940909		0.010425	7	5 18				<u> </u>		
Between Error Total Distributional T	0.0521286 0.0419623 0.0940909 ests		0.010425	7	5 18 23	4.472	0.0080	Significa	int Effect		
Total Distributional T Attribute	0.0521286 0.0419623 0.0940909 Fests		0.010425 0.002331	7 2	5 18 23 Test Stat	4.472	0.0080 P-Value	Significa Decision	nnt Effect n(α:1%)		
Between Error Total Distributional T	0.0521286 0.0419623 0.0940909 Fests	uality of Va	0.010425 0.002331	7 2	5 18 23	4.472	0.0080	Significa Decisio Equal Va	int Effect		
Between Error Total Distributional T Attribute Variances Distribution	0.0521286 0.0419623 0.0940909 Tests Test Bartlett Equ Shapiro-W	uality of V <i>a</i> ilk W Norm	0.010425 0.002331	7 2	5 18 23 Test Stat 9.046	4.472 	0.0080 P-Value 0.1072	Significa Decisio Equal Va	n(α:1%) ariances		
Between Error Total Distributional T Attribute Variances Distribution Mean Dry Bioma	0.0521286 0.0419623 0.0940909 Test Test Bartlett Eqi Shapiro-W ass-mg Summ	uality of Va ilk W Norm	0.010425 0.002331: ariance Test nality Test	7 2 2	5 18 23 Test Stat 9.046 0.888	4.472 Critical 15.09 0.884	0.0080 P-Value 0.1072 0.0121	Decision Equal Va Normal I	n(α:1%) ariances Distribution	CV%	%Effect
Between Error Total Distributional T Attribute Variances Distribution Mean Dry Bioma	0.0521286 0.0419623 0.0940909 rests	uality of Va ilk W Norm ary Count	0.010425 0.0023312 ariance Test nality Test	95% LCL	5 18 23 Test Stat 9.046 0.888	4.472 Critical 15.09 0.884 Median	0.0080 P-Value 0.1072 0.0121 Min	Decision Equal Va Normal I	n(α:1%) ariances Distribution Std Err	CV%	%Effect
Between Error Total Distributional T Attribute Variances Distribution Mean Dry Bioma Conc-% 0	0.0521286 0.0419623 0.0940909 Test Test Bartlett Eqi Shapiro-W ass-mg Summ	uality of Va ilk W Norm ary Count	0.010425 0.0023312 ariance Test nality Test Mean 0.59	95% LCL 0.4823	5 18 23 Test Stat 9.046 0.888 95% UCL 0.6977	4.472 Critical 15.09 0.884 Median 0.61	0.0080 P-Value 0.1072 0.0121 Min 0.493	Decision Equal Vanormal I Max 0.647	n(a:1%) ariances Distribution Std Err 0.03385	11.47%	0.00%
Between Error Total Distributional T Attribute Variances Distribution Mean Dry Bioma Conc-% 0 6.25	0.0521286 0.0419623 0.0940909 rests	uality of Va ilk W Norm ary Count 4	0.010425 0.0023312 ariance Test nality Test Mean 0.59 0.6925	95% LCL 0.4823 0.6474	5 18 23 Test Stat 9.046 0.888 95% UCL 0.6977 0.7376	4.472 Critical 15.09 0.884 Median 0.61 0.6915	0.0080 P-Value 0.1072 0.0121 Min 0.493 0.662	Decision Equal Vanormal I Max 0.647 0.725	n(a:1%) ariances Distribution Std Err 0.03385 0.01417	11.47% 4.09%	0.00% -17.37%
Between Error Total Distributional T Attribute Variances Distribution Mean Dry Bioma Conc-% 0 6.25 12.5	0.0521286 0.0419623 0.0940909 rests	uality of Va ilk W Norm ary Count 4 4	0.010425 0.0023312 ariance Test nality Test Mean 0.59 0.6925 0.657	95% LCL 0.4823 0.6474 0.607	5 18 23 Test Stat 9.046 0.888 95% UCL 0.6977 0.7376 0.707	Critical 15.09 0.884 Median 0.61 0.6915 0.6635	0.0080 P-Value 0.1072 0.0121 Min 0.493 0.662 0.618	Decision Equal Valorimal I Max 0.647 0.725 0.683	n(a:1%) ariances Distribution Std Err 0.03385 0.01417 0.01572	11.47% 4.09% 4.79%	0.00% -17.37% -11.36%
Between Error Total Distributional T Attribute Variances Distribution Mean Dry Biom. Conc-% 0 6.25 12.5 25	0.0521286 0.0419623 0.0940909 rests	uality of Va ilk W Norm ary Count 4 4 4	0.010425 0.0023312 ariance Test nality Test Mean 0.59 0.6925 0.657 0.7417	95% LCL 0.4823 0.6474 0.607 0.7201	5 18 23 Test Stat 9.046 0.888 95% UCL 0.6977 0.7376 0.707 0.7634	Critical 15.09 0.884 Median 0.61 0.6915 0.6635 0.7445	0.0080 P-Value 0.1072 0.0121 Min 0.493 0.662 0.618 0.723	Decision Equal Va Normal I Max 0.647 0.725 0.683 0.755	n(a:1%) ariances Distribution Std Err 0.03385 0.01417 0.01572 0.006799	11.47% 4.09% 4.79% 1.83%	0.00% -17.37% -11.36% -25.72%
Between Error Total Distributional T Attribute Variances Distribution Mean Dry Biom Conc-% 0 6.25 12.5 25 50	0.0521286 0.0419623 0.0940909 rests	uality of Va ilk W Norm ary Count 4 4	0.010425 0.0023312 ariance Test nality Test Mean 0.59 0.6925 0.657	95% LCL 0.4823 0.6474 0.607	5 18 23 Test Stat 9.046 0.888 95% UCL 0.6977 0.7376 0.707	Critical 15.09 0.884 Median 0.61 0.6915 0.6635	0.0080 P-Value 0.1072 0.0121 Min 0.493 0.662 0.618	Decision Equal Valorimal I Max 0.647 0.725 0.683	n(a:1%) ariances Distribution Std Err 0.03385 0.01417 0.01572	11.47% 4.09% 4.79%	0.00% -17.37% -11.36%
Between Error Total Distributional T Attribute Variances Distribution Mean Dry Bioma Conc-% 0 6.25 12.5 25 50 100	0.0521286 0.0419623 0.0940909 Fests Test Bartlett Equal Shapiro-W ass-mg Summ Code D	uality of Va ilk W Norm ary Count 4 4 4 4	0.010425 0.0023312 ariance Test nality Test Mean 0.59 0.6925 0.657 0.7417 0.674	95% LCL 0.4823 0.6474 0.607 0.7201 0.5493	5 18 23 Test Stat 9.046 0.888 95% UCL 0.6977 0.7376 0.707 0.7634 0.7987	Critical 15.09 0.884 Median 0.61 0.6915 0.6635 0.7445 0.709	0.0080 P-Value 0.1072 0.0121 Min 0.493 0.662 0.618 0.723 0.557	Decision Equal Va Normal I Max 0.647 0.725 0.683 0.755 0.721	n(a:1%) ariances Distribution Std Err 0.03385 0.01417 0.01572 0.006799 0.03918	11.47% 4.09% 4.79% 1.83% 11.63%	0.00% -17.37% -11.36% -25.72% -14.24%
Between Error Total Distributional T Attribute Variances Distribution Mean Dry Bioma Conc-% 0 6.25 12.5 25 50 100 Mean Dry Bioma	0.0521286 0.0419623 0.0940909 Test Bartlett Equal Shapiro-W ass-mg Summ Code D	uality of Va ilk W Norm ary Count 4 4 4 4	0.010425 0.0023313 ariance Test nality Test Mean 0.59 0.6925 0.657 0.7417 0.674 0.702	95% LCL 0.4823 0.6474 0.607 0.7201 0.5493 0.6449	5 18 23 Test Stat 9.046 0.888 95% UCL 0.6977 0.7376 0.707 0.7634 0.7987 0.7591	Critical 15.09 0.884 Median 0.61 0.6915 0.6635 0.7445 0.709	0.0080 P-Value 0.1072 0.0121 Min 0.493 0.662 0.618 0.723 0.557	Decision Equal Va Normal I Max 0.647 0.725 0.683 0.755 0.721	n(a:1%) ariances Distribution Std Err 0.03385 0.01417 0.01572 0.006799 0.03918	11.47% 4.09% 4.79% 1.83% 11.63%	0.00% -17.37% -11.36% -25.72% -14.24%
Between Error Total Distributional T Attribute Variances Distribution Mean Dry Bioma Conc-% 0 6.25 12.5 25 50 100 Mean Dry Bioma Conc-%	0.0521286 0.0419623 0.0940909 Test Bartlett Equal Shapiro-W ass-mg Summ Code D ass-mg Detail Code	uality of Va ilk W Norm ary Count 4 4 4 4 4	0.010425 0.0023313 ariance Test nality Test Mean 0.59 0.6925 0.657 0.7417 0.674 0.702	95% LCL 0.4823 0.6474 0.607 0.7201 0.5493 0.6449	5 18 23 Test Stat 9.046 0.888 95% UCL 0.6977 0.7376 0.707 0.7634 0.7987 0.7591	Critical 15.09 0.884 Median 0.61 0.6915 0.6635 0.7445 0.709	0.0080 P-Value 0.1072 0.0121 Min 0.493 0.662 0.618 0.723 0.557	Decision Equal Va Normal I Max 0.647 0.725 0.683 0.755 0.721	n(a:1%) ariances Distribution Std Err 0.03385 0.01417 0.01572 0.006799 0.03918	11.47% 4.09% 4.79% 1.83% 11.63%	0.00% -17.37% -11.36% -25.72% -14.24%
Between Error Total Distributional T Attribute Variances Distribution Mean Dry Bioma Conc-% 0 6.25 12.5 25 50 100 Mean Dry Bioma Conc-% 0 Conc-%	0.0521286 0.0419623 0.0940909 Test Bartlett Equal Shapiro-W ass-mg Summ Code D	uality of Varilk W Norm ary Count 4 4 4 4 4 7 4 4 0.493	0.010425 0.0023312 ariance Test nality Test Mean 0.59 0.6925 0.657 0.7417 0.674 0.702	95% LCL 0.4823 0.6474 0.607 0.7201 0.5493 0.6449 Rep 3 0.647	5 18 23 Test Stat 9.046 0.888 95% UCL 0.6977 0.7376 0.707 0.7634 0.7987 0.7591 Rep 4 0.598	Critical 15.09 0.884 Median 0.61 0.6915 0.6635 0.7445 0.709	0.0080 P-Value 0.1072 0.0121 Min 0.493 0.662 0.618 0.723 0.557	Decision Equal Va Normal I Max 0.647 0.725 0.683 0.755 0.721	n(a:1%) ariances Distribution Std Err 0.03385 0.01417 0.01572 0.006799 0.03918	11.47% 4.09% 4.79% 1.83% 11.63%	0.00% -17.37% -11.36% -25.72% -14.24%
Between Error Total Distributional T Attribute Variances Distribution Mean Dry Bioma Conc-% 0 6.25 12.5 25 50 100 Mean Dry Bioma Conc-% 0 6.25 6.25	0.0521286 0.0419623 0.0940909 Test Bartlett Equal Shapiro-W ass-mg Summ Code D ass-mg Detail Code	uality of Va ilk W Norm ary Count 4 4 4 4 4 4 4 9 Rep 1 0.493 0.662	0.010425 0.0023313 ariance Test nality Test Mean 0.59 0.6925 0.657 0.7417 0.674 0.702 Rep 2 0.622 0.725	95% LCL 0.4823 0.6474 0.607 0.7201 0.5493 0.6449 Rep 3 0.647 0.677	5 18 23 Test Stat 9.046 0.888 95% UCL 0.6977 0.7376 0.707 0.7634 0.7987 0.7591 Rep 4 0.598 0.706	Critical 15.09 0.884 Median 0.61 0.6915 0.6635 0.7445 0.709	0.0080 P-Value 0.1072 0.0121 Min 0.493 0.662 0.618 0.723 0.557	Decision Equal Va Normal I Max 0.647 0.725 0.683 0.755 0.721	n(a:1%) ariances Distribution Std Err 0.03385 0.01417 0.01572 0.006799 0.03918	11.47% 4.09% 4.79% 1.83% 11.63%	0.00% -17.37% -11.36% -25.72% -14.24%
Between Error Total Distributional T Attribute Variances Distribution Mean Dry Biom Conc-% 0 6.25 12.5 25 50 100 Mean Dry Biom Conc-% 0 6.25 12.5 25 50 100	0.0521286 0.0419623 0.0940909 Test Bartlett Equal Shapiro-W ass-mg Summ Code D ass-mg Detail Code	uality of Va ilk W Norm ary Count 4 4 4 4 4 4 7 8ep 1 0.493 0.662 0.683	0.010425 0.0023313 ariance Test nality Test Mean 0.59 0.6925 0.657 0.7417 0.674 0.702 Rep 2 0.622 0.725 0.682	95% LCL 0.4823 0.6474 0.607 0.7201 0.5493 0.6449 Rep 3 0.647 0.677 0.645	5 18 23 Test Stat 9.046 0.888 95% UCL 0.6977 0.7376 0.707 0.7634 0.7987 0.7591 Rep 4 0.598 0.706 0.618	Critical 15.09 0.884 Median 0.61 0.6915 0.6635 0.7445 0.709	0.0080 P-Value 0.1072 0.0121 Min 0.493 0.662 0.618 0.723 0.557	Decision Equal Va Normal I Max 0.647 0.725 0.683 0.755 0.721	n(a:1%) ariances Distribution Std Err 0.03385 0.01417 0.01572 0.006799 0.03918	11.47% 4.09% 4.79% 1.83% 11.63%	0.00% -17.37% -11.36% -25.72% -14.24%
Between Error Total Distributional T Attribute Variances Distribution Mean Dry Biom. Conc-% 0 6.25 12.5 25 50 100 Mean Dry Biom. Conc-% 0 6.25 12.5 25 50 100	0.0521286 0.0419623 0.0940909 Test Bartlett Equal Shapiro-W ass-mg Summ Code D ass-mg Detail Code	uality of Va ilk W Norm ary Count 4 4 4 4 4 4 0.493 0.662 0.683 0.742	0.010425 0.0023313 ariance Test nality Test Mean 0.59 0.6925 0.657 0.7417 0.674 0.702 Rep 2 0.622 0.725 0.682 0.723	95% LCL 0.4823 0.6474 0.607 0.7201 0.5493 0.6449 Rep 3 0.647 0.677 0.645 0.755	5 18 23 Test Stat 9.046 0.888 95% UCL 0.6977 0.7376 0.707 0.7634 0.7987 0.7591 Rep 4 0.598 0.706 0.618 0.747	Critical 15.09 0.884 Median 0.61 0.6915 0.6635 0.7445 0.709	0.0080 P-Value 0.1072 0.0121 Min 0.493 0.662 0.618 0.723 0.557	Decision Equal Va Normal I Max 0.647 0.725 0.683 0.755 0.721	n(a:1%) ariances Distribution Std Err 0.03385 0.01417 0.01572 0.006799 0.03918	11.47% 4.09% 4.79% 1.83% 11.63%	0.00% -17.37% -11.36% -25.72% -14.24%
Between Error Total Distributional T Attribute Variances Distribution	0.0521286 0.0419623 0.0940909 Test Bartlett Equal Shapiro-W ass-mg Summ Code D ass-mg Detail Code	uality of Va ilk W Norm ary Count 4 4 4 4 4 4 7 8ep 1 0.493 0.662 0.683	0.010425 0.0023313 ariance Test nality Test Mean 0.59 0.6925 0.657 0.7417 0.674 0.702 Rep 2 0.622 0.725 0.682	95% LCL 0.4823 0.6474 0.607 0.7201 0.5493 0.6449 Rep 3 0.647 0.677 0.645	5 18 23 Test Stat 9.046 0.888 95% UCL 0.6977 0.7376 0.707 0.7634 0.7987 0.7591 Rep 4 0.598 0.706 0.618	Critical 15.09 0.884 Median 0.61 0.6915 0.6635 0.7445 0.709	0.0080 P-Value 0.1072 0.0121 Min 0.493 0.662 0.618 0.723 0.557	Decision Equal Va Normal I Max 0.647 0.725 0.683 0.755 0.721	n(a:1%) ariances Distribution Std Err 0.03385 0.01417 0.01572 0.006799 0.03918	11.47% 4.09% 4.79% 1.83% 11.63%	0.00% -17.37% -11.36% -25.72% -14.24%

000-222-335-4 CETIS™ v1.9.4.1 Analyst:____ QA:____

Report Date: Test Code/ID:

14 Aug-19 15:37 (p 4 of 4) 19-970b / 18-6586-4961

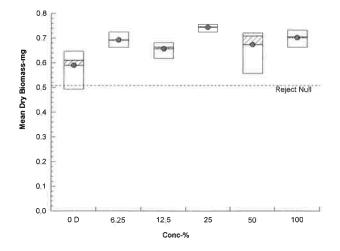
Fathead Minnow 7-d Larval Survival and Growth Test

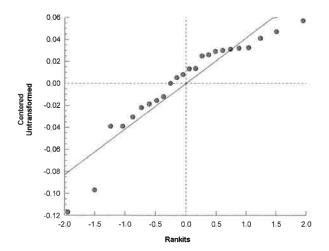
New England Bioassay

Analysis ID: 01-7843-7455 Endpoint: Mean Dry Biomass-mg CETIS Version: CETISv1.9.4

Analyzed: 14 Aug-19 15:37 Analysis: Parametric-Control vs Treatments Status Level: 1

Graphics





45 of 85

NEB Issued: 8/20/19

NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDI					on Street, W	eston MA 0	2193	
NEB PROJECT NUMBER			5.0752101.0		TEST ORGA			phales promelas
DILUTION WATER SOUP	RCE:	Labo	ratory Soft \	Water	START DAT	Έ:	7/22/19	TIME: 1429
ANALYST	CW	BA	ко	AS	CW	ВА	CW	
NEB Lab Synthetic Diluent	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.7	25.6	26.0	25.6	25.9	25.8	25.8	
D.O. mg/L Initial	8.2	8.1	8.1	8.1	8.2	8.2	8.2	
pH s.u. Initial	7.7	7.8	7.4	7.7	7.5	7.8	7.9	
Conductivity µS Initial	196	196	196	195	195	194	196	
remp °C Final	25.3	25.0	25.3	25.1	25.2	25.2	25.7	
D.O. mg/L Final	7.4	6.8	7.2	7.3	7.2	7.2	6.9	
pH s.u. Final	7.0	7.5	7.7	7.5	7.3	7.3	7.5	
Conductivity μS Final	199	198	211	197	197	199	240	
Pine Brook Control	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.5	25.8	26.0	25.7	24.5	26.6	25.5	
D.O. mg/L Initial	8.8	8.3	8.8	8.9	8.6	9.3	8.3	
oH s.u. Initial	7.3	7.4	7.4	7.4	7.0	7.0	7.6	
Conductivity µS Initial	608	608	393	391	580	580	581	
Temp °C Final	25.2	25.0	25.3	25.2	25.3	25.3	25.6	
D.O. mg/L Final	7.5	6.7	6.9	6.8	7.0	7.1	7.2	
oH s.u. Final	6.9	7.3	7.4	7.0	7.0	7.0	7.3	
Conductivity µS Final	606	610	424	396	566	588	628	
6.25%	1	2	3	4	5	6	7	Remarks
Femp °C Initial	24.9	25.7	26.0	25.5	25.7	25.9	25.6	
D.O. mg/L Initial	8.5	8.1	8.1	8.3	8.3	8.2	8.6	
oH s.u. Initial	7.5	7.6	7.4	7.5	7.5	7.5	7.7	
Conductivity µS Initial	252	252	254	250	250	245	256	
「emp °C Final	25.3	24.4	25.3	25.1	25.4	25.2	25.6	
D.O. mg/L Final	7.1	6.9	7.1	7.2	6.7	7.1	6.7	
oH s.u. Final	7.2	7.4	7.4	7.2	7.2	7.2	7.5	
Conductivity µS Final	254	256	257	253	252	249	295	
12.5%	1	2	3	4	5	6	7	Remarks
emp °C Initial	24.8	25.7	26.0	25.5	25.9	25.9	25.7	
O.O. mg/L Initial	8.3	8.1	8.0	8.1	8.3	8.3	8.3	
H s.u. Initial	7.5	7.7	7.4	7.8	7.6	7.6	7.8	
Conductivity µS Initial	301	298	307	306	304	310	307	
emp °C Final	25.2	24.9	25.4	25.1	25.2	25.3	25.7	
O.O. mg/L Final	7.1	6.9	6.9	7.1	7.1	6.9	6.6	
H s.u. Final	7.3	7.4	7.4	7.3	7.2	7.2	7.5	
Conductivity µS Final	302	302	310	309	308	315	321	

NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDR					on Street, W	eston MA (
NEB PROJECT NUMBER:			5.0752101.0		_TEST ORGA			phales promelas
DILUTION WATER SOUR	T		ratory Soft \		START DAT		7/22/19	
25%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.8	25.6	26.0	25.4	25.7	25.8	25.4	
D.O. mg/L Initial	8.2	8.2	8.0	8.2	8.3	8.3	8.3	
pH s.u. Initial	7.5	7.7	7.4	7.9	7.6	7.6	7.8	
Conductivity µS Initial	412	410	422	427	423	418	416	
Temp °C Final	25.4	25.3	25.3	25.2	25.4	25.3	25.7	
D.O. mg/L Final	7.1	6.0	6.8	6.9	6.7	7.1	6.5	
pH s.u. Final	7.3	7.4	7.4	7.4	7.3	7.3	7.6	
Conductivity µS Final	412	413	425	430	425	424	461	
50%	1	2	3	4	5	6	7	Remarks
Геmp °C Initial	24.9	25.6	26.0	25.1	25.4	25.7	24.9	
D.O. mg/L Initial	8.3	8.3	7.8	8.3	8.4	8.4	8.7	
pH s.u. Initial	7.5	7.7	7.4	7.9	7.7	7.7	7.8	
Conductivity µS Initial	619	615	654	648	632	639	639	
Temp °C Final	25.3	24.8	25.0	25.1	25.3	25.2	25.7	
D.O. mg/L Final	7.3	7.3	7.2	7.1	6.9	7.1	6.9	
pH s.u. Final	7.7	7.7	7.7	7.7	7.5	7.4	7.6	
Conductivity µS Final	618	622	659	654	638	649	657	
100%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.9	25.4	26.0	24.8	25.3	25.5	24.9	
D.O. mg/L Initial	9.1	8.8	6.8	8.5	8.5	9.0	8.5	
pH s.u. Initial	7.5	7.7	7.5	7.8	7.8	7.6	7.8	
Conductivity µS Initial	831	1,033	1,086	1,081	1,059	1,059	1,061	
Temp °C Final	25.3	25.0	25.1	25.0	25.4	25.3	25.4	
D.O. mg/L Final	7.4	6.8	6.9	7.2	6.5	7.2	7.2	
oH s.u. Final	7.6	7.9	7.9	7.9	7.8	7.7	8.2	
Conductivity µS Final	840	1,014	1,084	1,083	1,062	1,068	1,100	
				-				
				2				

Tab	le o	f Ra	ndo	m P	ermuta	tion	s of	16					P.p	rom	elas	Test II) #	19	9-970	0b
7	12	15	15	1	2	7	16	10	2	1	4	15	7	13	13	10	6	1	8	10
13	3	8	16	7	10	11	10	13	5	1	1	7	13	16	7	7	5	13	2	14
3	1	4	5	14	13	3	14	9	13	1	3	2	9	15	6	2	8	4	5	8
11	8	16	14	15	6	2	6	2	16	8		5	12	3	9	13	4	3	10	4
14	9	1	6	3	9	14	13	8	6		5	8	14	7	3	15	13	11	4	7
2	16	10	13	5	5	13	2	11	7		3	12	5	14	12	16	2	2	9	15
4	6	13	7	2	15	1	9	1	4		7	10	6	9	11	9	7	6	16	11
6	14	6	10	4	14	4	15	3	3		4	16	2	6	5	1	12	10	6	9
		2	10	13		16	3	4				1	15	5	5 14	12	14	12	3	
10	15				12				8		0									2
12	10	7	12	9	11	9	8	12	14		5	4	11	8	16	8	9	14	14	1
15	7	5	2	10	7	8	12	6	15	6		13	16	12	15	4	11	8	12	6
16	2	11	8	8	8	15	5	16	1		1	9	8	1	8	14	16	5	13	5
9	13	14	3	6	4	10	11	5	12		9	3	10	4	4	3	10	9	1	3
8	11	9	4	11	3	12	7	7	10	_	2	14	3	10	1	6	15	16	15	12
1	5	12	11	16	16	5	4	14	9	1	6	11	1	2	10	5	1	15	7	13
5	4	3	9	12	1	6	1	15	11	2	2	6	4	11	2	11	3	7	11	16
												conc								
11	8	16	5	5	13	1	13	2	16	1	4	12	9	8	7	5	13	3	13	3
2	2	8	8	14	16	4	3	8	11	1	0	14	15	1	2	11	4	5	15	9
6	13	2	13	6	5	9	15	11	10	1	2	6	16	15	16	9	10	12	16	15
14	12	4	16	16	11	14	10	5	12		3	3	12	14	15	13	6	4	1	16
8	6	3	9	4	10	6	4	16	2		2	9	8	16	4	6	5	15	7	8
9	15	12	10	3	2	12	6	1	15		1	13	7	7	9	12	14	8	8	11
3	10	11	12	13	12	5	11	7	8	9		5	14	11	10	1	3	13	3	5
16	10	13	14	8	14	15	5	3	7		1	15	6	12	5	7	11	1	3 14	4
1	14	14	2	9	15	16	14	6	14		7	8	3	13	11	8	7	7	12	7
4	4	6	4	12	3	11	8	15	9	8		1	13	6	3	3	15	9	9	12
15	5	1	11	10	6	3	7	10	5		5	11	10	10	12	15	16	14	5	2
5	3	5	6	7	7	13	2	14	3		6	4	5	5	13	4	9	16	2	6
12	7	15	15	15	9	8	12	12	13		5	10	1	4	6	16	2	6	11	1
10	11	10	3	2	4	2	1	4	6	6	5	7	11	9	14	10	8	11	4	13
7	9	7	7	11	1	7	16	13	1	1	3	2	4	2	1	2	12	2	10	14
13	16	9	1	1	8	10	9	9	4	1	L	16	2	3	8	14	1	10	6	10
																	rep			
1	6	7	4	8	6	5	2	8	15	4	1	6	6	1	4	5	7	13	2	10
9	15	11	3	11	15	9	10	1	3	8	3	2	15	7	9	8	16	1	14	3
10	16	4	5	12	9	16	11	7	1	7	7	16	11	8	3	3	12	2	3	4
4	14	1	9	5	5	4	13	6	8	1	5	5	12	5	7	16	5	11	8	1
7	3	13	14	15	2	1	14	16	5	1	4	9	2	16	1	12	6	14	4	13
16	11	2	1	14	16	6	9	3	4	1		14	3	15	11	11	3	9	12	5
3	10	16	16	13	7	13	1	11	14	9		10	16	2	10	2	10	7	10	16
11	13	9	13	4	13	8	3	5	13	1		12	5	12	5	14	13	16	5	6
15	2	3	12	9	12	2	4	13	10	3		13	14	4	2	1	14	8	6	12
14	1	3 14		10	1	3	12	4	2	2		4	13	3	16	9	9	3	7	
	12		6 11		11	5 15			7					3 14		4	4	4		14
13		5		3			8	2		1		7	8		6				15	11
12	5	10	7	2	14	7	15	14	16	1		1	9	10	12	10	11	10	9	8
8	9	8	10	6	4	11	7	10	11	: 6		8	4	9	8	15	8	6	11	9
2	7	6	2	1	8	10	6	15	12		L	11	7	11	13	6	1	15	13	15
6	4	15	8	16	10	14	16	9	6	1		3	10	6	14	7	2	12	16	7
5	8	12	15	7	3	12	5	12	9	5	5	15	1	13	15	13	15	5	1	2
13	4	10	4	16	13	16	13	5	3	e		14	1	16	8	7	2	3	3	12
5	14	4	6	8	2	15	1	13	14	1	6	4	15	4	3	12	12	1	4	7
2	2	2	15	14	16	9	12	16	6	1	0	15	14	9	10	1	14	8	8	16
7	12	15	8	12	3	5	14	7	12	5	5	13	16	1	7	5	11	2	9	3
6	9	7	14	9	14	10	11	15	11	1	2	1	12	12	14	16	3	11	11	8
14	5	16	7	10	8	11	8	14	13	7	7	11	6	3	11	4	4	6	6	9
15	11	8	9	7	12	8	7	1	15	9		3	3	7	13	11	10	4	5	1
11	6	6	1	4	1	3	16	12	5	4		9	13	13	6	8	15	9	1	14
4	10	3	16	2	11	7	9	6	9	1		8	4	11	5	2	16	10	12	4
1	8	1	13	1	15	4	4	11	4		2	16	5	8	1	9	5	12	16	6
9	7	14	2	6	4	14	10	9	8	1		10	7	10	9	10	6	14	10	11
12	1	9	10	15	5	2	15	10	2	1.		2	8	2	4	13	8	5	15	5
3	3	12	11	5	9	6	6			1		12	9	6	2	15	7	15	7	3 13
3 10	3 15	11	5	5 13	9 7	12		3 2	10 7	1		5	10	15	12		1		13	
							5 2									3		13		10
8 16	13	13	3	3	10	13		4	1	8		6	11	14	15	6	9	16	2	2
16	16	5	12	11	6	1	3	8	16	3	•	7	2	5	16	14	13	7	14	15

CHEMICAL ANALYSIS

Please note the subcontract laboratory has its own QAQC and data review processes, and therefore New England Bioassay does not review the analytical results we receive.



Tuesday, July 30, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PINE BROOK COUNTRY CLUB

SDG ID: GCD65927

Sample ID#s: CD65927 - CD65929

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis/Shiller

Laboratory Director

NELAC - #NY11301

CT Lab Registration #PH-0618

MA Lab Registration #M-CT007

ME Lab Registration #CT-007

NH Lab Registration #213693-A,B

NJ Lab Registration #CT-003 NY Lab Registration #11301

PA Lab Registration #68-03530

RI Lab Registration #63

UT Lab Registration #CT00007

VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040 Telephone (860) 645-1102 Fax (860) 645-0823



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

July 30, 2019

SDG I.D.: GCD65927

Project ID:

PINE BROOK COUNTRY CLUB

Client Id	Lab Id	Matrix
EFFLUENT 3 C39-2838	CD65927	WASTE WATER
RECEIVING WATER C39-2839	CD65928	WATER
EFFLUENT GRAB 3	CD65929	WASTE WATER



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 30, 2019

FOR:

Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Information

WASTE WATER

Custody Information

<u>Date</u> <u>Time</u>

Matrix:

WASIE WATE

Collected by:

07/26/19 07/26/19 9:30

Location Code:

NEB

Received by: Analyzed by: LB see "By" below

16:10

Rush Request: P.O.#:

Standard 22525

Laboratory Data

SDG ID: GCD65927

Phoenix ID: CD65927

Project ID:

PINE BROOK COUNTRY CLUB

Client ID:

EFFLUENT 3 C39-2838

RL/

Parameter

 Result
 PQL
 Units
 Dilution
 Date/Time
 By
 Reference

 < 0.05</td>
 0.05
 mg/L
 1
 07/30/19
 DA
 E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

Ammonia as Nitrogen

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

July 30, 2019

Reviewed and Released by: Helen Geoghegan, Project Manager

Ver 1



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 30, 2019

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample InformationCustody InformationDateTimeMatrix:WATERCollected by:07/26/199:26Location Code:NEBReceived by:LB07/26/1916:10

Rush Request: Standard Analyzed by: see "By" below

P.O.#: 22525

Laboratory Data SDG ID: GCD65927

Phoenix ID: CD65928

Project ID: PINE BROOK COUNTRY CLUB
Client ID: RECEIVING WATER C39-2839

RL/

Parameter	Result	PQL	Units	Dilution	Date/Time	Ву	Reference
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	07/30/19	DA	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

July 30, 2019

Reviewed and Released by: Helen Geoghegan, Project Manager

53 of 85 NEB Issued: 8/20/19

Page 4 of 9



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 30, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample InformationCustody InformationDateTimeMatrix:WASTE WATERCollected by:07/26/199:13Location Code:NEBReceived by:LB07/26/1916:10

Rush Request: Standard Analyzed by: see "By" below P.O.#: 22525

Laboratory Data SDG ID: GCD65927

Phoenix ID: CD65929

Project ID: PINE BROOK COUNTRY CLUB

Client ID: EFFLUENT GRAB 3

RL/ Parameter **PQL** Units Dilution Result Date/Time By Reference Chlorine Residual 0.03 0.02 mg/L 1 SM4500CLG-97 07/26/19 18:40 0 07/27/19 06:00 RR/EG SM4500-H B-11 8.05 1.00 pH Units 1 pΗ

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

July 30, 2019

Reviewed and Released by: Helen Geoghegan, Project Manager

Ver 1



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 30, 2019

QA/QC Data

SDG I.D.: GCD65927

Parameter	Blank	BIk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	Rec Limits	RPD Limits
QA/QC Batch 489830 (pH), QC	Sample	No: C	D65831 (0	D65929	9)								
рН			8,13	8,18	0.60	99.2						85 - 115	20
Comment:													
Additional: LCS acceptance range	e is 85-11	5% MS	acceptance	e range 7	75-125%								
QA/QC Batch 489946 (mg/L), 0	QC Samp	ole No:	CD65853	(CD659	27, CD	65928)							
Ammonia as Nitrogen	BRL	0.05	<0.10	<0.10	NC	104			102			90 - 110	20
QA/QC Batch 489723 (mg/L), (QC Samp	ole No:	CD65852	(CD659	29)								
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	104							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference

LCS - Laboratory Control Sample

LCSD - Laboratory Control Sample Duplicate

MS - Matrix Spike

MS Dup - Matrix Spike Duplicate

NC - No Criteria

Intf - Interference

Phyllis/Shiller, Laboratory Director

July 30, 2019

Tuesday, July 30, 2019

Sample Criteria Exceedances Report

Criteria: None
State: MA

GCD65927 - NEB

Phoenix Analyte

Result RL Criteria Criteria Units

*** No Data to Display ***

Acode

SampNo

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance,

Page 7 of 9



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Comments

July 30, 2019

SDG I.D.: GCD65927

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

57 of 85

	DANCE COLOUR TO MARCO	Y RECORD	5 dwal	5 1 rg on
THOUNT WAS	587 East Middle Tumpike, P.O. Box 370, Manchester, CT 06040 Email: service@phoenixlabs.com Fax (860) 645-0823), Manchester, CT 06040 Fax (860) 645-0823	Data Delivery (check one): Fax #: X Email kimberly wills@gz	Jata Delivery (check one):
Environmental Laboratories, Inc.	Client Services (860) 645-8726	\$	Format:	Excel Pdf Gis Key
Customet: New England Bioassay	Project: 1me	ひろのなってもはだる	Ty Project P.O:	44545
Address: 77 Batson Drive	Report to: Kim Wills		1 Phone #: 860	860-643-9560
Manchester, CT 06042	Invoice to: Kim Wills	1	7 Fax # 860-	860-646-7169
Client Sample - Information - Identification				1 1 / 1/28
Sampler's Signature	Analysis Request		SA PROPERTY OF THE PROPERTY OF	**************************************
	Train Train		10000	91/7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
DW=drinking water WW=wastewater S=soil/solid O=other GW=groundwater SL=sludge A=air	Die Police			1100 x 11
_	Time Time			00 8 18 18 18 18 18 18 18 18 18 18 18 18 1
Fiffing	1030 ×	-		
Receiving Water 37839 0 7/26	09360			-
929 Effluent Grab - 3 W/W 7/26	5160		-	
	$\overline{}$			
Relinquished by:	Date:	Turnaround:	Requirements for CT	Requirements for MA
J C. W.	72, 11	1 Day*	Res. Criteria	 8-1-
100 May 40	J. 2-8-16 1(0%)		GW Protection GA Mobility	% %-7
Comments, Special Requirements or Regulations:		Standard	GB Mobility SW Protection	
Please see detection Ilmits (MLs) listed next to each parameter above		* Surcharge Applies	Ind. Vol.	MCP Certification



Tuesday, July 30, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PINE BROOK COUNTRY CLUB

SDG ID:

GCD62372

Sample ID#s: CD62372 - CD62374

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis/Shiller

Laboratory Director

NELAC - #NY11301

CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007

NH Lab Registration #213693-A,B

NJ Lab Registration #CT-003 NY Lab Registration #11301

PA Lab Registration #68-03530 RI Lab Registration #63

UT Lab Registration #CT00007

VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040 Telephone (860) 645-1102 Fax (860) 645-0823



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

July 30, 2019

SDG I.D.: GCD62372

Project ID:

PINE BROOK COUNTRY CLUB

Client Id	Lab Id	Matrix
EFFLUENT #1 C39-2767	CD62372	WASTE WATER
PINE BROOK #1 C39-2768	CD62373	WATER
EFF GRAB #1	CD62374	WASTE WATER



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 30, 2019

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Information

Matrix:

WASTE WATER

NEB

Location Code: Rush Request: P.O.#:

Standard 22525

Custody Information

Collected by: Received by:

В

07/22/19

Date

<u>Time</u> 9:08

07/22/19

16:36

Analyzed by: see "By" below

Laboratory Data

SDG ID: GCD62372

Phoenix ID: CD62372

Project ID:

PINE BROOK COUNTRY CLUB

Client ID:

EFFLUENT #1 C39-2767

		RL/					
Parameter	Result	PQL	Units	Dilution	Date/Time	Ву	Reference
Aluminum	0.084	0.010	mg/L	1	07/24/19	EK	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	07/24/19	RS	SM3113B
Copper	0.0857	0.0010	mg/L	1	07/24/19	EK	E200.7
Hardness (CaCO3)	195	0.1	mg/L	1	07/24/19		E200.7
Nickel	0.005	0.001	mg/L	1	07/24/19	EK	E200.7
Lead	< 0.0003	0.0003	mg/L	1	07/24/19	RS	SM3113B
Zinc	0.052	0.002	mg/L	1	07/24/19	EK	E200.7
Alkalinity-CaCO3	143	5.00	mg/L	1	07/23/19	RR/EG	SM2320B-11
Conductivity	1040	5.00	umhos/cm	1	07/23/19	RR/EG	SM2510B-11
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	07/24/19	KDB	E350.1
Tot. Diss. Solids	610	10	mg/L	1	07/24/19	BMD/BJ/	SM2540C-11
Tot. Org. Carbon	6.33	0.50	mg/L	1	07/27/19	RR/EG	SM5310B-11
Total Solids	650	10	mg/L	1	07/24/19	BJA	SM2540B-11
Total Metals Digestion	Completed				07/23/19	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

July 30, 2019

Reviewed and Released by: Helen Geoghegan, Project Manager

61 of 85



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 30, 2019

P.O.#:

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample InformationCustody InformationDateTimeMatrix:WATERCollected by:07/22/199:32Location Code:NEBReceived by:B07/22/1916:36

Rush Request: Standard Analyzed by: see "By" below

Laboratory Data

SDG ID: GCD62372

Phoenix ID: CD62373

Project ID: PINE BROOK COUNTRY CLUB
Client ID: PINE BROOK #1 C39-2768

22525

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	Ву	Reference
Aluminum	0.143	0.020	mg/L	1	07/28/19	CPP	SW6010D/E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	07/24/19	RS	SM3113B/SW7010-10
Copper	0.0022	0.0020	mg/L	1	07/28/19	CPP	SW6010D/E200.7
Hardness (CaCO3)	94.8	0.1	mg/L	1	07/29/19		E200.7
Nickel	< 0.001	0.001	mg/L	1	07/29/19	EK	SW6010D/E200.7
Lead	< 0.0003	0.0003	mg/L	1	07/24/19	RS	SM3113B/SW7010
Zinc	0.005	0.004	mg/L	1	07/28/19	CPP	SW6010D/E200.7
Alkalinity-CaCO3	45.1	5.00	mg/L	1	07/23/19	RR/EG	SM2320B-11
Conductivity	613	5.00	umhos/cm	1	07/23/19	RR/EG	SM2510B-11
Ammonia as Nitrogen	0.11	0.05	mg/L	1	07/24/19	KDB	E350.1
pН	7.20	1.00	pH Units	1	07/23/19 10:31	RR/EG	SM4500-H B-11
Tot. Org. Carbon	2.85	0.50	mg/L	1	07/27/19	RR/EG	SM5310B-11
Total Metals Digestion	Completed				07/23/19	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

July 30, 2019

Reviewed and Released by: Helen Geoghegan, Project Manager



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 30, 2019

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Information

WASTE WATER

Custody Information

Date Time

Matrix: **Location Code:**

NEB

Collected by: Received by:

07/22/19 07/22/19

9:40 16:36

Rush Request:

Standard

Analyzed by:

see "By" below

SDG ID: GCD62372

P.O.#:

22525

Laboratory Data

Phoenix ID: CD62374

PINE BROOK COUNTRY CLUB

Project ID: Client ID:

EFF GRAB #1

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	Ву	Reference
Chlorine Residual	0.03	0.02	mg/L	1	07/22/19 19:48	0	SM4500CLG-97
pH	8.01	1.00	pH Units	1	07/23/19 10:39	RR/EG	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

July 30, 2019

Reviewed and Released by: Helen Geoghegan, Project Manager



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 30, 2019

QA/QC Data

SDG	l.D.:	GCD62372	

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 488568 (mg/L), C	C Sam	ole No: (D61234	(CD623	72, CD	62373)							
Cadmium - Water	BRL	0.0001	0.0099	0.0098	NC	102			89.8			75 - 125	20
QA/QC Batch 488568 (mg/L), C	C Sam	ole No: 0	CD61234	(CD623	72, CD	62373)							
Lead (Furnace) - Water	BRL	0.001	0.024	0.025	4.10	101			110			75 - 125	30
QA/QC Batch 489111 (mg/L), C	C Sam	ole No: 0	CD61161	(CD623	72)								
ICP Metals - Aqueous													
Aluminum	BRL	0.010	0.028	0.031	NC	107	104	2.8	113			75 - 125	20
Copper	BRL	0.0025	0.011	0.0100	NC	108	104	3.8	112			75 - 125	20
Nickel	BRL	0.001				100	112	11.3	99.3			75 - 125	20
Zinc	BRL	0.0020	0.033	0.0322	2.50	99.5	109	9.1	102			75 - 125	20
QA/QC Batch 489115 (mg/L), C	C Sam	ole No: (D61829	(CD623	73)								
ICP Metals - Aqueous													
Aluminum	BRL	0.020	0.055	0.054	NC	101	102	1.0	103			75 - 125	20
Copper	BRL	0.005	<0.005	0.006	NC	108	110	1.8	109			75 - 125	20
Nickel	BRL	0.001	0.001	< 0.001	NC	101	104	2.9	102			75 - 125	20
Zinc	BRL	0.004	<0.004	< 0.004	NC	94.8	94.2	0.6	97.4			75 - 125	20



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 30, 2019

QA/QC Data

SDG I.D.: GCD62372

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	Rec Limits	RPD Limits
QA/QC Batch 489052 (mg/L), Q	C Samp	ole No:	CD62003	(CD623	72, CD	62373)							
Alkalinity-CaCO3	BRL	10.0	74	72	NC	102						85 - 115	20
Comment:													
Additional: LCS acceptance range	is 85-11	5% MS a	acceptance	e range 7	5-125%								
QA/QC Batch 489079 (umhos/c	•			•		•	2373)						
Conductivity	BRL	5.00	610	612	0.30	101						85 - 115	20
Comment:				_									
Additional: LCS acceptance range			•	_									
QA/QC Batch 489067 (pH), QC	Sample	No: CL	•				D62374)				05 445	
pH Comment:			7.69	7.77	1.00	99.0						85 - 115	20
Additional: LCS acceptance range	ic 95 11	50/ MC /	occoptopo	rongo 7	E 125%								
			•	•		•							
QA/QC Batch 489303 (mg/L), Q Total Solids	BRL	י .טאו שונ 10	650	650	72) 0	98.0						85 - 115	20
Comment:	5.11	10	000	000	·	00.0						50 110	20
Additional: LCS acceptance range	is 85-11	5% MS a	acceptance	range 7	5-125%								
QA/QC Batch 489227 (mg/L), Q			•	•									
Tot. Diss. Solids	BRL	10	1200	1200	0	98.0						85 - 115	20
Comment:													
Additional: LCS acceptance range	is 85-11	5% MS a	acceptance	e range 7	5-125%								
QA/QC Batch 489822 (mg/L), Q	C Samp	ole No: (CD63366	(CD623	72, CD	62373)							
Total Organic Carbon	BRL	1.0	<1.0	<1.0	NC	108			101			85 - 115	20
Comment:													
Additional: LCS acceptance range	is 85-11	5% MS a	acceptance	range 7	5-125%								
QA/QC Batch 489009 (mg/L), Q	C Samp	ole No: (CD61698	(CD623	72, CD	62373)							
Ammonia as Nitrogen Comment:	BRL	0.05	0.13	0.13	NC	104			96.8			90 - 110	20
TKN is reported as Organic Nitroge	en in the	Blank, L	CS, DUP a	and MS.									
QA/QC Batch 488912 (mg/L), Q	C Samp	ole No: (CD61828	(CD623	74)								
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	109							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference

LCS - Laboratory Control Sample

LCSD - Laboratory Control Sample Duplicate

MS - Matrix Spike

MS Dup - Matrix Spike Duplicate

NC - No Criteria

Intf - Interference

Phyllis Shiller, Laboratory Director

July 36, 2019

Tuesday, July 30, 2019 Criteria: None

Sample Criteria Exceedances Report GCD62372 - NEB

State: MA

SampNo Acode

Phoenix Analyte

Criteria

Result

RL

Criteria

RL Criteria Analysis Units

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report, It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Page 8 of 10

^{***} No Data to Display ***





Environmental Laboratories, Inc. 587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Comments

July 30, 2019 SDG I.D.: GCD62372

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

Page 9 of 10

ata Delivery/Contact Op	Project P.O. 23525 This section MUST be completed with Bottle Quantities.			Data Format
USTODY RECORD -0. Box 370, Manchester, CT 06040 -1. Box 370, Manchester, CT 06040	Project: The Dink India Club (Report to: Kin Wills Invoice to: Kin Wills QUOTE #	A STATE OF THE PARTY OF THE PAR		RI CT MA
OENIX SERVING Inc.	Address: MEB- a Dac of G2A Address: MY Batson Dribue Address: MA Cheating C1 Dloop a	Sampler's Signature Signature Matrix Code: Date: DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water BW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Soild W=Wipe OIL=Oil	PHOENIX USE ONLY Customer Sample Sample Date Time Sampled Sampled Sampled COS	Relinquished by: Comments, Special Requirements or Regulations: Turnaround Time: 1 Day* 2 Days* 2 Days* 3 Days* Other *SURCHARGE APPLIES

Page 10 of 10



Friday, July 26, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PINE BROOK COUNTRY CLUB

SDG ID: GCD64321

Sample ID#s: CD64321 - CD64323

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis/Shiller

Laboratory Director

NELAC - #NY11301

CT Lab Registration #PH-0618

MA Lab Registration #M-CT007

ME Lab Registration #CT-007 NH Lab Registration #213693-A,B NJ Lab Registration #CT-003

NY Lab Registration #11301

PA Lab Registration #68-03530 RI Lab Registration #63

UT Lab Registration #CT00007

VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040 Telephone (860) 645-1102 Fax (860) 645-0823



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

July 26, 2019

SDG I.D.: GCD64321

Project ID:

PINE BROOK COUNTRY CLUB

Client Id	Lab Id	Matrix
EFFLUENT-2 C39-2798	CD64321	WASTE WATER
RECEIVING WATER-2 C39-2799	CD64322	SURFACE WATER
EFFLUENT GRAB-2	CD64323	WASTE WATER



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 26, 2019

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Information

WASTE WATER

Custody Information

Date

Time

Matrix:

P.O.#:

Collected by:

07/24/19

10:10

Location Code:

NEB

22525

Received by:

Laboratory Data

SW

07/24/19

17:02

Rush Request:

Standard

Analyzed by:

see "By" below

SDG ID: GCD64321

Phoenix ID: CD64321

Project ID:

PINE BROOK COUNTRY CLUB

Client ID:

EFFLUENT-2 C39-2798

RL/

Parameter Result **PQL**

Units

Dilution Date/Time

By

Reference

Ammonia as Nitrogen 0.06 0.05 mg/L 1 07/26/19 DA E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

July 26, 2019

Reviewed and Released by: Helen Geoghegan, Project Manager

Ver 1



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 26, 2019

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

 Sample Information
 Custody Information
 Date
 Time

 Matrix:
 SURFACE WATER
 Collected by:
 07/24/19
 9:40

 Location Code:
 NEB
 Received by:
 SW
 07/24/19
 17:02

Rush Request: Standard Analyzed by: see "By" below

Laboratory Data SDG ID: GCD64321

Phoenix ID: CD64322

Project ID: PINE BROOK COUNTRY CLUB
Client ID: RECEIVING WATER-2 C39-2799

RL/

Parameter	Result	PQL	Units	Dilution	Date/Time	Ву	Reference
Ammonia as Nitrogen	0.12	0.05	mg/L	1	07/26/19	DA	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

P.O.#:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

July 26, 2019

Reviewed and Released by: Helen Geoghegan, Project Manager

Ver 1Page 4 of 9



Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Fax (860) 645-0823 Tel. (860) 645-1102

Analysis Report

July 26, 2019

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Information **Custody Information** Date Time Matrix: WASTE WATER Collected by: 07/24/19 9:49 Received by: Location Code: **NEB** 07/24/19 17:02 SW

Rush Request: Standard Analyzed by: see "By" below

aboratory Data.

SDG ID: GCD64321

Phoenix ID: CD64323

PINE BROOK COUNTRY CLUB Project ID:

22525

Client ID: **EFFLUENT GRAB-2**

RL/ Parameter PQL Units Dilution Date/Time Result Reference By Chlorine Residual < 0.02 0.02 mg/L 1 07/24/19 19:15 SM4500CLG-97 8.05 1.00 pH Units 07/25/19 09:27 RWR/KDBSM4500-H B-11 1 pΗ

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

P.O.#:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

July 26, 2019

Reviewed and Released by: Helen Geoghegan, Project Manager

Ver 1

73 of 85 NEB Issued: 8/20/19

Page 5 of 9



Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 26, 2019

QA/QC Data

SDG I.D.: GCD64321

Parameter	Blank	Bik RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 489441 (pH), QC Sample No: CD64263 (CD64323)													
pН			7.50	7.62	1.60	98.7						85 - 115	20
Comment:													
Additional: LCS acceptance range	Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.												
QA/QC Batch 489413 (mg/L), QC Sample No: CD63719 (CD64321, CD64322)													
Ammonia as Nitrogen	BRL	0.05	0.39	0.34	13.7	100			101			90 - 110	20
QA/QC Batch 489351 (mg/L), QC Sample No: CD64323 (CD64323)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	107							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference

LCS - Laboratory Control Sample

LCSD - Laboratory Control Sample Duplicate

MS - Matrix Spike

MS Dup - Matrix Spike Duplicate

NC - No Criteria

Intf - Interference

Phyllis/Shiller, Laboratory Director

July 26, 2019

Friday, July 26, 2019 Criteria: None

Sample Criteria Exceedances Report GCD64321 - NEB

01-1	444			D07321 - NLD				
State:	IVIA						RL	Analysis
SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	Criteria	Units

^{***} No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.



Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Comments

July 26, 2019 SDG I.D.: GCD64321

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

Temp 2.2 Pg of Temp 2.2 Pg of Fax # Exx #	Requirements for MA GW-1 GW-2 GW-2 GW-3 S-1 S-2 S-2 GW-3 GW-3 GW-3 GW-3 GW-3 GW-3 GW-3 GW-2 GW-3 GW-2 GW-2
(MM) Project Fax #: For State of the state o	Requirements for CT Res. Criteria GW Protection GB Mobility SW Protection Res. Vol. Ind. Vol.
CHAIN OF CUSTODY RECORD Email: service@phoenixlabs.com Fax (860) 645-0823 Client Service@phoenixlabs.com Fax (860) 645-0823 Client Services (860) 645-8726 Project: Chal Charle Charles Report to: Kim Wills Invoice to: Kim Wills Analysis Request X X X X X X X X X X X X X X X X X X X	Turnaround: 1 Day* 2 Days* 3 Days* Cher Cother * Surcharge Applies
CHAIN OF CUSTOI S87 East Middle Tumpike, P.O. Box 3 Email: service@phoenixlabs.com Client Service (866 Project: Cul. Col. Col. Col. Col. Col. Col. Col. Co	7-34-6, 16-3c
Tayled 7/24/19	Accepted by: Kay Stoll MOUL is: Faulk@gza.com on reports
Hand Laborat England Bioass atson Drive thester, CT 0604 Www-wastewater SL=sludge Customer Sample - Info identification identification identification identification identification identification identification identification	Relinquished by: Comments, Special Requirements or Regulations: Please see detection limits (MLs) listed next to each parameter above Please CC: Melanie. Cruff@gza.com and Robin.Faulk@gza.com on reports
Environme Customer: New Address: 77 B Marrix Code: DW-drinking water GW-groundwater Phoenix Sample #	Comments, Spe Please see dete

SAMPLE RECEIPT CHEMISTRY & CHAIN OF CUSTODY DOCUMENTS

NEW ENGLAND BIOASSAY - INITIAL CHEMISTRY DATA

PERMITTEE:	Pine Brook Country Club				
NEB JOB #	05.0752101.00				

DATE RECEIVED	7/22/19		7/24	4/19	7/26/19		
SAMPLE TYPE:	EFF #1	BROOK #1	EFF #2	BROOK #2	EFF #3	BROOK #3	
coc#	C39-2767	C39-2768	C39-2798	C39-2799	C39-2838	C39-2839	
pH (SU)	7.2	6.9	7.3	7.6	7.4	7.2	
Temperature (°C)	2.0	2.0	9.1	4.7	2.4, 4.0	4.9	
Dissolved Oxygen (mg/L)	8.9	9.5	6.6	9.9	7.9	9.7	
Conductivity (µmhos)	1,038	608	1,085	404	1,071	586	
Salinity (ppt)	<1	<1	<1	<1	<1	<1	
TRC - DPD (mg/L)	0.017	0.014	0.006	0.010	0.010	0.010	
TRC - Amperometric (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	
Hardness (mg/L as CaCO ₃)	192	90	238	56	236	86	
Alkalinity (mg/l as CaCO ₃)	145	45	175	35	160	40	
Tech Initials	СН	СН	СН	СН	КО	КО	

NOTE: NA = NOT APPLICABLE	

Data Reviewed By:

Date Reviewed:

NEW ENGLAND BIOASSA	Y- CHAIN-OF-CUSTODY
EFFLUENT Sample Sot #/	RECEIVING WATER
Sampler: Steven Hansen	Sampler: Steven Hansen
Title: Operator	Title: Operator
Facility: Pine Brook Country Club	Facility: Pine Brook Country Club
Sampling Method: X Composite Sample ID: Effluent	Sampling Method: X Grab Sample ID: Pine Brook
Start Date: 7-21-19 Time: 13-38	Date Collected: 7-22-19
End Date: 7-22-19 Time: 9:08	Time Collected: 9132
Sampling Method: X Grab (for pH and TRC only X) Date Collected: 7-22-19 Time Collected: 9:40 Sample Type: Prechlorinated Dechlorinated Unchlorinated Chlorinated Chlorinated Effluent Sampling Location and Procedures: After Sand filler before UV Composite Sampler Receiving Water Sampling Location and Procedures:	unit
Requested Analysis: X Chronic and modified acute	
Sample Sl	inment
	приси
Method of Shipment: NEB Courier	-
Relinquished By: Date:	7-22-19 Time: 9:45
Received By: Date:	7.2219 Time: 6945
Relinquished By: Date:	7/22/19 Time: / 200
Received By: Date:	7/22/19 Time: 1200
Optional In	
Purchase Order # to reference on invoice:	Received
	ON ICE
FOR NEB U	
* Please return all ice packs NEB has provided to insure ac	
Temperature of Effluent Upon Receipt at Lab: 20 °C Te	mperature of Receiving Water Upon Receipt at Lab: 2.0 °C
020 000	eceiving Water COC# <u>C39-2768</u>

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO: KIM WILLS, NEW ENGLAND BIOASSAY, 77 BATSON DRIVE, MANCHESTER CT 06042

EFFLUENT Sample Set # 2 Sampler: Steve Hansen	RECEIVING WATER
Sampler: Steve Hansen	Sampler: Steve Hansen
Title: Operator	Title: Operator
Facility: Pine Brook Country Club	Facility: Pine Brook Country Club
Sampling Method: X Composite Sample ID: Effluent Start Date: 7-23-19 Time: 2347 End Date: 7-24-19 Time: Cubtainer Sa Sampling Method: X Grab (for pH and TRC only X) Date Collected: 7-24-19 Time Collected: 949 Sample Type: Prechlorinated Dechlorinated Unchlorinated	Sampling Method: X Grab Sample ID: Pine Brook Date Collected: 7-2/4-19 Time Collected: 9 8 40
Requested Analysis: X Chronic and modified acute	anual grab
Sample S	hipment
Method of Shipment: NEB Courier Relinquished By: Date: Received By: Date: Dat	7-24-19 Time: 10:12 7-24-19 Time: 10:12 7-24-19 Time: 11:45 7/24[19 Time: 1145
Optional In	formation
Purchase Order # to reference on invoice:	Received ON ICE
FOR NEB U	
* Please return all ice packs NEB has provided to insure a	ccurate temperature upon receipt to the NEB laboratory.
Temperature of Effluent Upon Receipt at Lab: 91 °C Temperature	emperature of Receiving Water Upon Receipt at Lab: 4.7 °C
0.30 0000	Leceiving Water COC# C39-2799

NEW ENGLAND BIOASSAY- CHAIN-OF-CUSTODY

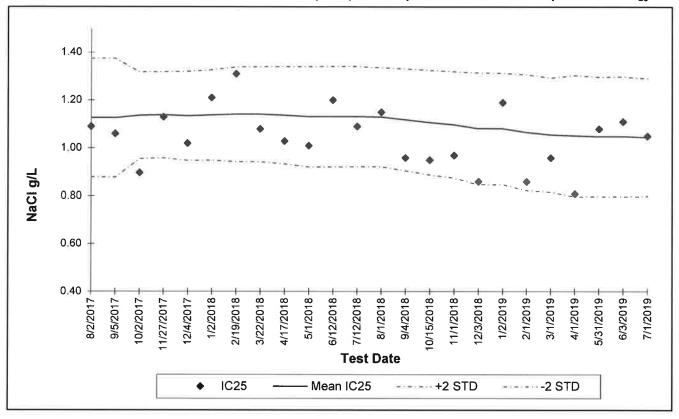
IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO: KIM WILLS, NEW ENGLAND BIOASSAY, 77 BATSON DRIVE, MANCHESTER CT 06042

NEW ENGLAND BIOASSA	Y- CHAIN-OF-CUSTODY
EFFLUENT Sample Sot #3	RECEIVING WATER
Sampler: Steven Hansen	Sampler: Steven Hansey
Title: Operator	Title: Operator
Facility: Pine Brook Country Club	Facility: Pine Brook Country Club
Sampling Method: X Composite	Sampling Method: X Grab
Sample ID: Effluent	Sample ID: Pine Brook
Start Date: 135/19 Time: 10:30	Date Collected: 7-2 6-19
End Date: 7/26/19 Time: 9:00	Time Collected: 936
Sampling Method: X Grab (for pH and TRC only X) Date Collected: 7/26/19 Time Collected: 913	
Sample Type: Prechlorinated Dechlorinated Unchlorinated Chlorinated	
Effluent Sampling Location and Procedures: Composite sampler after sa	nd filter before UV
Receiving Water Sampling Location and Procedures:	
Surface OF Brook 10 FT	up stream of outfall
Requested Analysis: X Chronic and modified acute	
Sample SI	ipment
Method of Shipment: NEB Courier	=
Relinquished By: Man Prunny Date:	726-19 Time: 10,725
Received By: Ol Bo Date:	7/26 Time: 10.25
Relinquished By:	7/26, Time: 12:40
Received By: Q Mul Date:	7/2/0/19 Time: 1240
	1/30/1
Optional In	
Purchase Order # to reference on invoice:	Received ON ICE
FOR NEB U	
* Please return all ice packs NEB has provided to insure ac	
Temperature of Effluent Upon Receipt at Lab 2.4,40c Te	mperature of Receiving Water Upon Receipt at Lab: 4-9 °C
100 100	eceiving Water COC# <u>(39-2839</u>

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO: KIM WILLS, NEW ENGLAND BIOASSAY, 77 BATSON DRIVE, MANCHESTER CT 06042

REFERENCE TOXICANT CHARTS

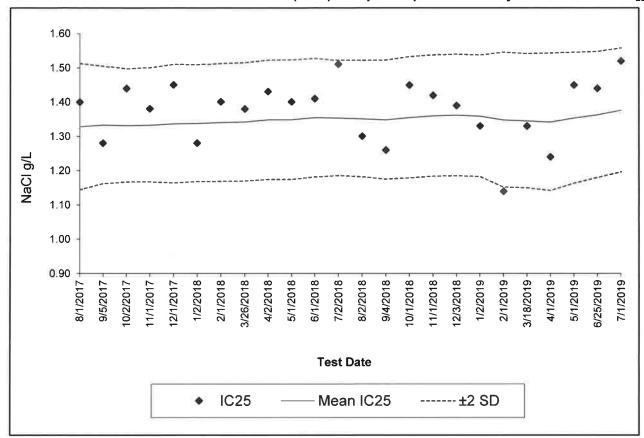
New England Bioassay
Reference Toxicant Data: Sodium chloride (NaCl) Ceriodaphia dubia Chronic Reproduction IC₂₅



								Repro PMSD	Avg. PMSD
Test ID	Date	IC ₂₅	Mean IC ₂₅	STD	-2STD	+2STD	Avg. CV	(%)	(%)
17-1146	8/2/2017	1.09	1,13	0.12	0.88	1.38	0.11	23.94	15.20
17-1317	9/5/2017	1.06	1.13	0.12	0.88	1.38	0.11	33.78	16.13
17-1516	10/2/2017	0.90	1.14	0.09	0.95	1.32	0.08	24.47	16.53
17-1787	11/27/2017	1.13	1.14	0.09	0.96	1.32	0.08	19.97	16.69
17-1846	12/4/2017	1.02	1,13	0.09	0.95	1.32	0.08	14.69	16.60
18-10	1/2/2018	1.21	1.14	0.09	0.95	1.33	0.08	10.81	16.36
18-271	2/19/2018	1.31	1.14	0.10	0.94	1.34	0.09	22.90	16.56
18-416	3/22/2018	1.08	1.14	0.10	0.94	1.34	0.09	17.59	16.88
18-553	4/17/2018	1.03	1.14	0.10	0.93	1.34	0.09	38.54	17.77
18-607	5/1/2018	1.01	1,13	0.10	0.92	1.34	0.09	24.65	18:25
18-816	6/12/2018	1.20	1.13	0.11	0.92	1.34	0.09	46.97	19.59
18-996	7/12/2018	1.09	1.13	0.10	0.92	1.34	0.09	11.41	19.70
18-1103	8/1/2018	1,15	1.13	0.10	0.92	1.34	0.09	17.23	19.67
18-1315	9/4/2018	0.96	1.12	0.11	0.91	1.33	0.10	22.12	20.09
18-1577	10/15/2018	0.95	1.11	0.11	0.89	1.33	0.10	24.32	20.64
18-1625	11/1/2018	0.97	1.10	0.11	0.88	1.32	0.10	31.57	21.34
18-1756	12/3/2018	0.86	1.08	0.12	0.85	1.32	0.11	15.77	21.00
19-8	1/2/2019	1.19	1,08	0.12	0.85	1.31	0.11	40.72	21.30
19-177	2/1/2019	0.86	1.07	0.12	0.82	1.31	0.11	18.71	21.63
19-265	3/1/2019	0.96	1.06	0.12	0.82	1.29	0.11	19.84	22.13
19-403	4/1/2019	0.81	1.05	0.13	0.80	1.30	0.12	10.09	21.85
19-674	5/31/2019	1.08	1.05	0.12	0.80	1.30	0.12	15.59	21.93
19-688	6/3/2019	1.11	1.05	0.12	0.80	1.30	0.12	15.24	22.23
19-926	7/1/2019	1.05	1.04	0.12	0.80	1.29	0.12	12.60	22.23

National 75th Percentile and 90th Percentile CV Averages for Ceriodaphnia Reproduction IC25 (EPA 833-R-00-003): 0.45 - 0.62 PMSD Upper and Lower Bounds for Ceriodaphnia Reproduction (EPA-821-R-02-013): 13% - 47%

New England Bioassay
Reference Toxicant Data: Sodium chloride (NaCl) *Pimephales promelas* 7-day Chronic Growth IC₂₅



Test ID	Date	IC ₂₅	Mean IC ₂₅	STD	-2STD	+2STD	Avg. CV	Growth PMSD (%)	Avg. PMSD (%)
17-1147	8/1/2017	1.40	1.33	0.09	1.14	1.51	0.07	11.35	9.91
17-1318	9/5/2017	1.28	1.33	0.09	1:16	1.50	0.06	13.74	10.11
17-1522	10/2/2017	1.44	1.33	0.08	1.17	1.50	0.06	10.36	10.12
17-1696	11/1/2017	1.38	1.33	0.08	1.17	1.50	0.06	9.27	10.08
17-1809	12/1/2017	1.45	1.34	0.09	1.16	1.51	0.06	26.17	10.78
18-11	1/2/2018	1.28	1.34	0.09	1.17	1.51	0.06	6.16	10.59
18-184	2/1/2018	1.40	1.34	0.09	1.17	1.51	0.06	10.52	10.51
18-416	3/26/2018	1.38	1.34	0.09	1.17	1.51	0.06	9.14	10.49
18-472	4/2/2018	1.43	1.35	0.09	1.17	1.52	0.06	6.25	10.57
18-608	5/1/2018	1.40	1.35	0.09	1.17	1.52	0.06	11.80	10.88
18-745	6/1/2018	1.41	1.35	0.09	1.18	1.53	0.06	13.87	11.08
18-919	7/2/2018	1.51	1.35	0.08	1.19	1.52	0.06	12.86	10.83
18-1104	8/2/2018	1.30	1.35	0.08	1.18	1.52	0.06	9.21	10.63
18-1316	9/4/2018	1.26	1.35	0.09	1.18	1.52	0.06	11.89	10.84
18-1512	10/1/2018	1.45	1.36	0.09	1.18	1.53	0.06	8.61	10.76
18-1626	11/1/2018	1.42	1.36	0.09	1.18	1.54	0.06	9.48	10.87
18-1757	12/3/2018	1.39	1.36	0.09	1.18	1.54	0.06	9.70	10.95
19-9	1/2/2019	1.33	1.36	0.09	1.18	1.54	0.07	8.91	11.06
19-178	2/1/2019	1.14	1.35	0.10	1∞15	1.54	0.07	6.84	10.94
19-376	3/18/2019	1.33	1.35	0.10	1,15	1.54	0.07	15.36	10.73
19-404	4/1/2019	1.24	1.34	0.10	1.14	1.54	0.07	7.57	10.73
19-541	5/1/2019	1.45	1.35	0.10	1.16	1.54	0.07	7.92	10.62
19-823	6/25/2019	1.44	1.36	0.09	1.18	1.55	0.07	10.75	10.76
19-927	7/1/2019	1.52	1.38	0.09	1.20	1.56	0.07	14.21	10.91

National 75th Percentile and 90th Percentile CV Averages for Fathead Growth IC25 (EPA 833-R-00-003): 0.38 - 0.45 PMSD Upper and Lower Bounds for Fathead Growth (EPA-821-R-02-013): 12% - 30%